

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Margaret Einsmann Examiner #: 69738 Date: 10/27/04
 Art Unit: 1751 Phone Number 30 2 1314 Serial Number: 10/601599
 Mail Box and Bldg/Room Location: Room 9A49 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: See attached Bob sheet

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search the dye of claim 5 (from ~~the~~ the)
 with ^{CI} Reactive Blue 19, which is dye 1
Y = C-C- (see definition in cl 1)

Thank you



STAFF USE ONLY**Type of Search****Vendors and cost where applicable**

Searcher: <u>LH</u>	NA Sequence (#) _____	STN <u>\$527.49</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>3</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____
Date Completed: <u>10/29/04</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>90</u>	Other _____	Other (specify) _____

=> d his

(FILE 'HOME' ENTERED AT 08:52:18 ON 29 OCT 2004)

FILE 'LREGISTRY' ENTERED AT 08:52:33 ON 29 OCT 2004

L1 STRUCTURE
L2 STRUCTURE

FILE 'REGISTRY' ENTERED AT 09:28:41 ON 29 OCT 2004

L3 5 S L1 SAM
L4 50 S L2 SAM

FILE 'LREGISTRY' ENTERED AT 09:42:23 ON 29 OCT 2004

L5 STRUCTURE L2

FILE 'REGISTRY' ENTERED AT 09:43:20 ON 29 OCT 2004

L6 113 S L1 FUL
L7 47 S L6 AND CU/ELS
L8 50 S L5 SAM
L9 9036 S L8 FUL
L10 0 S L7 AND L9
L11 0 S L6 AND L9

FILE 'HCA' ENTERED AT 09:51:09 ON 29 OCT 2004

L12 67 S L6
L13 18 S L7
L14 6884 S L9
L15 3 S L14 AND L12
L16 3 S L14 AND L13
L17 3 S L15 OR L16
L18 18 S L13 OR L17
L19 15 S L13 NOT L17

FILE 'REGISTRY' ENTERED AT 10:03:11 ON 29 OCT 2004

SAV L6 EIN599/A
SAV L7 EIN599A/A
SAV L9 EIN599B/A

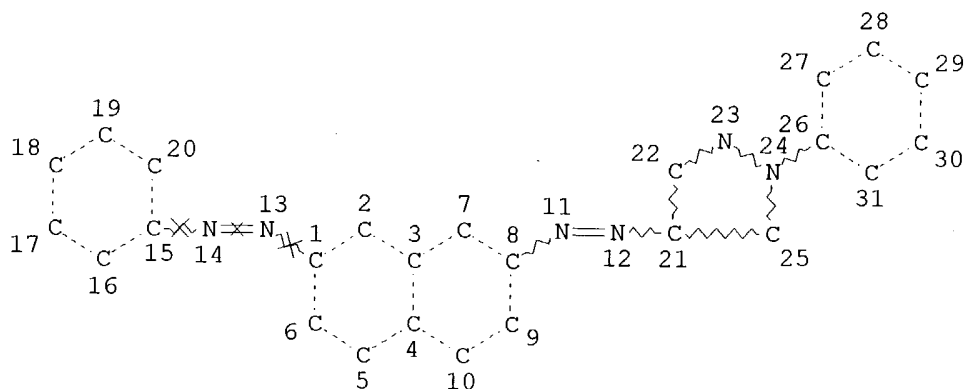
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L21 1 S L7
L22 1 S L20 AND L21
L23 677 S L9
L24 0 S L22 AND L23

FILE 'HCA' ENTERED AT 10:09:56 ON 29 OCT 2004

=> d que l17

L1 STR



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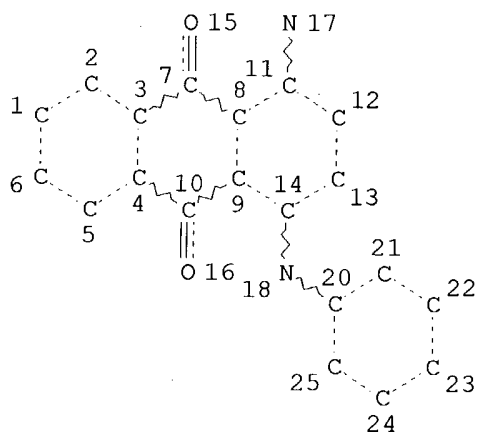
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 DEFAULT ECLEVEL IS LIMITED

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 NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE

L5 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

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 L14 6884 SEA FILE=HCA ABB=ON PLU=ON L9
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 L16 3 SEA FILE=HCA ABB=ON PLU=ON L14 AND L13
 L17 3 SEA FILE=HCA ABB=ON PLU=ON L15 OR L16

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L17 ANSWER 1 OF 3 HCA COPYRIGHT 2004 ACS on STN

124:178765 Amination of cellulosic synthetic fibers for dyeing with anionic reactive dyes. Schrell, Andreas; Russ, Werner, Hubert; Huber, Bernd (Hoechst A.-G., Germany). Eur. Pat. Appl. EP 683251 A1 19951122, 16 pp. DESIGNATED STATES: R: AT, CH, DE, FR, GB, IT, LI, SE. (German). CODEN: EPXXDW. APPLICATION: EP 1995-106357 19950427. PRIORITY: DE 1994-4417211 19940517; DE 1994-4421740 19940622.

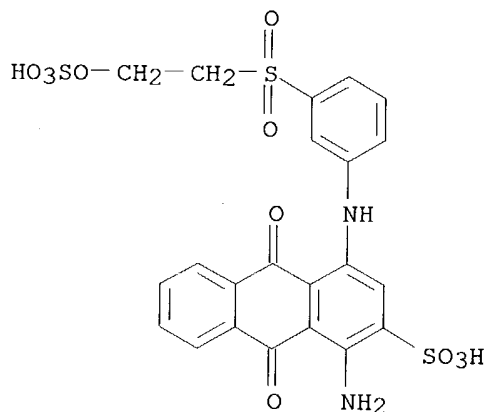
AB The title fibers are spun from a cellulose or viscose solution containing a specified amino compound, e.g., N-(2-sulfatoethyl)piperazine sulfate, ClCH₂CHOHCH₂NMe₃Cl, glycidyltrimethylammonium chloride, etc., as modifying additive. No alkalies or salts are needed for dyeing textiles made of such fibers with anionic reactive dyes.

IT 2580-78-1 57602-19-4

RL: PEP (Physical, engineering or chemical process); PROC (Process) (amine-modified viscose fiber dyed with; amination of cellulosic synthetic fibers for dyeing with anionic reactive dyes)

RN 2580-78-1 HCA

CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]-, disodium salt (9CI) (CA INDEX NAME)

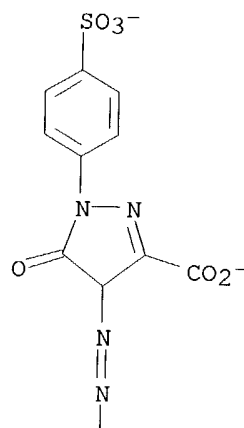


●2 Na

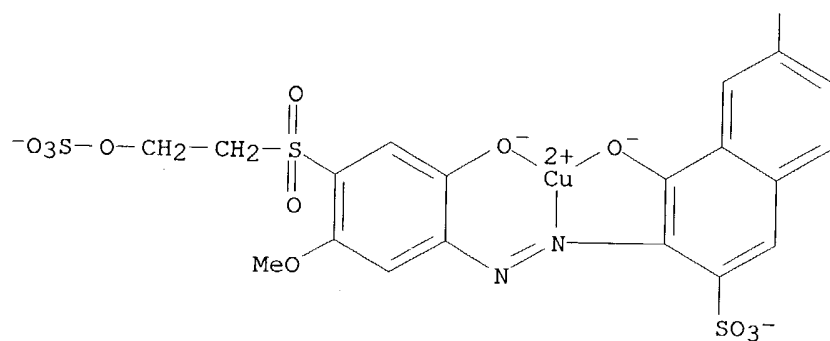
RN 57602-19-4 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy-κO)-7-[[2-(hydroxy-κO)-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo-κN1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

● 4 H⁺

IC ICM D01F002-00
 ICS D01F002-06; D01F002-10; D06P003-66
 CC 40-2 (Textiles and Fibers)
 IT **2580-78-1** 14826-60-9 21214-43-7 25926-16-3 27336-21-6
 55909-92-7 **57602-19-4** 88159-08-4 98114-32-0 98231-75-5
 118244-01-2 173607-51-7 173607-52-8 173607-53-9 173607-54-0
 173607-55-1 173936-51-1
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (amine-modified viscose fiber dyed with; amination of cellulosic
 synthetic fibers for dyeing with anionic reactive dyes)

L17 ANSWER 2 OF 3 HCA COPYRIGHT 2004 ACS on STN
123:289511 Reactive dye mixtures. Russ, Werner Hubert; Hussong, Kurt;
Schulze-Braucks, Manfred; Kunze, Michael (Hoechst A.-G., Germany). Eur.
Pat. Appl. EP 668328 A2 19950823, 55 pp. DESIGNATED STATES: R: BE, CH,
DE, FR, GB, IE, IT, LI. (German). CODEN: EPXXDW. APPLICATION: EP
1995-101916 19950213. PRIORITY: DE 1994-4405358 19940219.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Mixts. of reactive dyes are provided for dyeing or printing cellulosic or
polyamide fibers in various shades. In each case the mixture comprises
90-99.99% of a principal component and 0-10% each of ≤ 4 nuancing
components. Specific combinations of general types of reactive dye, as
specified by Markush structures, are claimed to provide yellow, blue,
navy, red, black, orange, violet, and brown tones. For example, a mixture
of 1000 g I and 4 g II dyed cellulosic fibers blue.

IT 170018-22-1

RL: TEM (Technical or engineered material use); USES (Uses)
(blue; reactive dye mixts. for cellulosic and polyamide fibers)

RN 170018-22-1 HCA

CN Cuprate(4-), [5-hydroxy-4-[[8-hydroxy-7-[[2-hydroxy-5-methyl-4-[[2-
(sulfooxy)ethyl]sulfonyl]phenyl]azo]-6-sulfo-2-naphthalenyl]azo]-1-(4-
sulfophenyl)-1H-pyrazole-3-sulfonato(6-)]-, tetrahydrogen, mixt. with
tetrahydrogen [2-[[[[2-hydroxy-3-sulfo-5-[[2-(sulfooxy)ethyl]sulfonyl]phen
yl]azo]phenylmethyl]azo]-4-sulfobenzoato(6-)]cuprate(4-) (9CI) (CA INDEX
NAME)

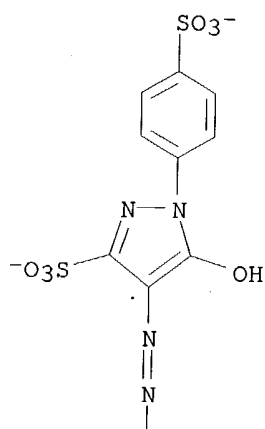
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CRN 170018-21-0

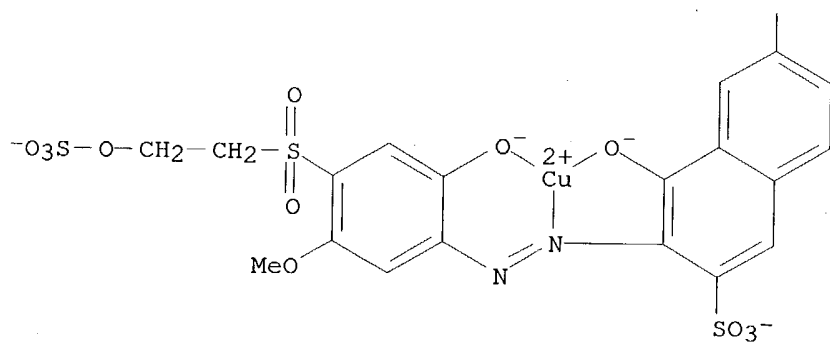
CMF C28 H18 Cu N6 O19 S5 . 4 H

CCI CCS

PAGE 1-A



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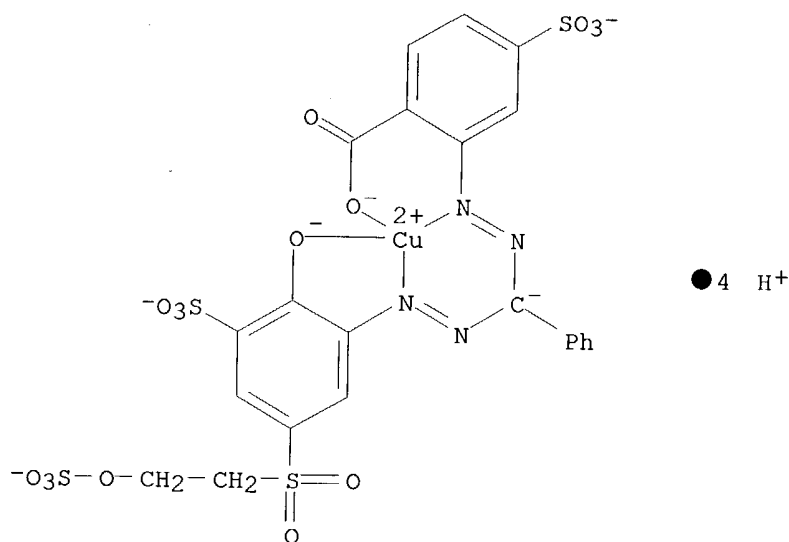
● 4 H⁺

CM 2

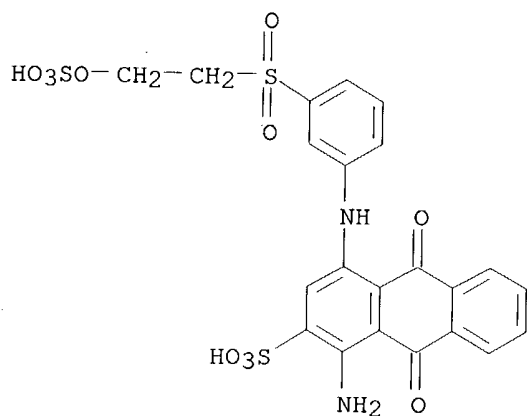
CRN 122284-73-5

CMF C22 H14 Cu N4 O15 S4 . 4 H

CCI CCS



IT **6522-88-9D**, mixture with nickel phthalocyanine sulfo derivative
 RL: TEM (Technical or engineered material use); USES (Uses)
 (green; reactive dye mixts. for cellulosic and polyamide fibers)
 RN 6522-88-9 HCA
 CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]- (9CI) (CA INDEX NAME)



IC ICM C09B067-00
 CC 40-6 (Textiles and Fibers)
 IT **170018-22-1**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (blue; reactive dye mixts. for cellulosic and polyamide fibers)
 IT 147-14-8D, mixture with (acetoacetamido)benzenesulfonic acid derivative
6522-88-9D, mixture with nickel phthalocyanine sulfo derivative
 14055-02-8D, mixture with anthraquinonesulfonic acid derivative 82391-15-9D,
 mixture with copper phthalocyanine sulfo derivative
 RL: TEM (Technical or engineered material use); USES (Uses)
 (green; reactive dye mixts. for cellulosic and polyamide fibers)

L17 ANSWER 3 OF 3 HCA COPYRIGHT 2004 ACS on STN

101:92734 Stable aqueous liquid composition of reactive dyes containing β -sulfatoethylsulfonyl groups. Corso, Anthony J. (American Hoechst Corp., USA). U.S. US 4448583 A 19840515, 9 pp. (English). CODEN: USXXAM. APPLICATION: US 1983-468513 19830222.

AB Liquid reactive dye compns. storable at 0-50° for long periods without decomposition to the vinylsulfonyl form consist of 5-45 weight% water-soluble

reactive dye containing 1-3 HO₃SOCH₂CH₂SO₂ groups (or a mixture of such dyes), 0-10 weight% water-soluble inorg. salt, and 45-95 weight% H₂O. The composition has a pH

of 2.5-4.5 and is substantially free of buffer substances. For example, the vinyl sulfone content of an aqueous dye solution containing .apprx.14-18% 4,2,5-HO₃SOCH₂CH₂SO₂(MeO)2C₆H₂N:NCH(COMe)CONHC₆H₂(OMe)(SO₃H)Me-2,4,5 [82391-15-9] and 0-6% inorg. salt and adjusted to pH 4.5 increased only 2.4% when the solution was stored for 105 days at 40°.

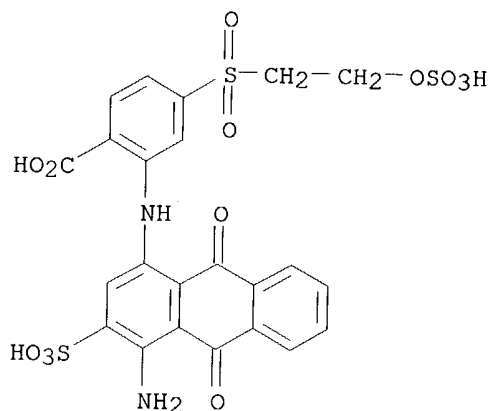
IT 20640-71-5 91629-89-9

RL: USES (Uses)

(reactive dye, aqueous liquid compns. containing, storage-stable)

RN 20640-71-5 HCA

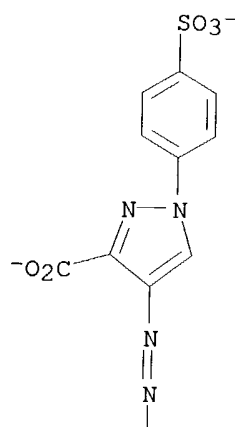
CN Benzoic acid, 2-[(4-amino-9,10-dihydro-9,10-dioxo-3-sulfo-1-anthracenyl)amino]-4-[[2-(sulfooxy)ethyl]sulfonyl]- (9CI) (CA INDEX NAME)



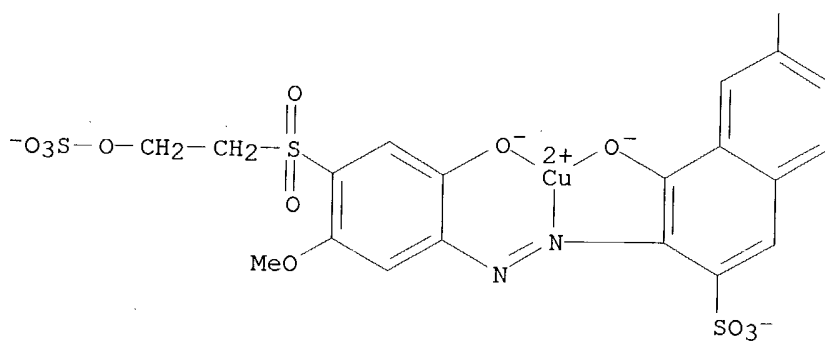
RN 91629-89-9 HCA

CN Cuprate(4-), [4-[[8-hydroxy-7-[[2-hydroxy-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]-6-sulfo-2-naphthalenyl]azo]-1-(4-sulphophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen (9CI) (CA INDEX NAME)

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● 4 H⁺

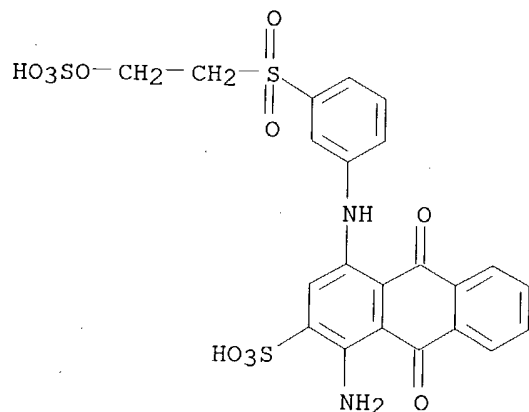
IT 6522-88-9

RL: USES (Uses)

(reactive dye, aqueous solns. of, storage-stable)

RN 6522-88-9 HCA

CN 2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[[3-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]amino]- (9CI) (CA INDEX NAME)



IC D06P067-00; C09B062-00

NCL 008527000

CC 40-6 (Textiles)

Section cross-reference(s): 41

IT 10149-98-1 13588-33-5 15188-78-0 **20640-71-5** 20704-33-0
 23807-34-3 25311-20-0 29253-37-0 33773-63-6 36090-21-8
 55909-92-7 60958-41-0 68039-61-2 68399-92-8 68399-93-9
 71396-24-2 72269-58-0 **91629-89-9** 91667-03-7 91667-04-8
 91677-63-3 91677-64-4

RL: USES (Uses)

(reactive dye, aqueous liquid compns. containing, storage-stable)

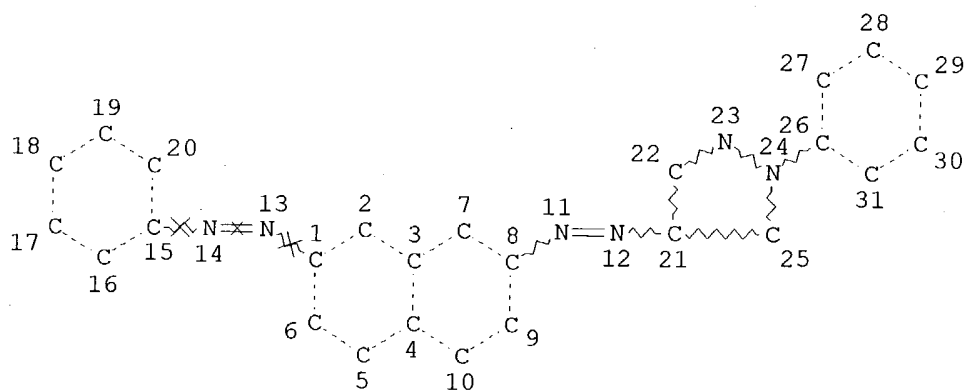
IT **6522-88-9** 33432-08-5 67892-59-5 68400-00-0 82391-15-9
 91667-02-6

RL: USES (Uses)

(reactive dye, aqueous solns. of, storage-stable)

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L1 STR



NODE ATTRIBUTES:

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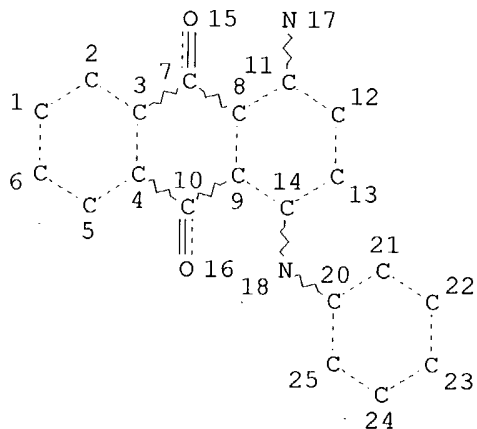
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DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE
L5 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 24

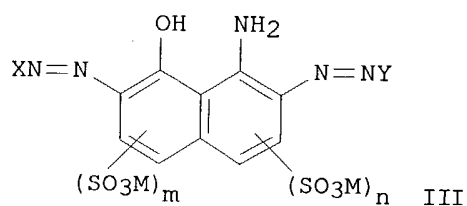
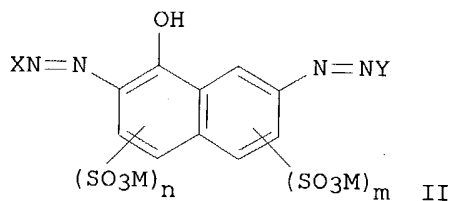
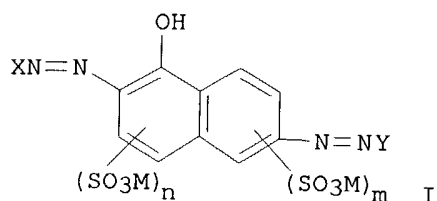
STEREO ATTRIBUTES: NONE

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L7 47 SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND CU/ELS
L9 9036 SEA FILE=REGISTRY SSS FUL L5
L12 67 SEA FILE=HCA ABB=ON PLU=ON L6
L13 18 SEA FILE=HCA ABB=ON PLU=ON L7
L14 6884 SEA FILE=HCA ABB=ON PLU=ON L9
L15 3 SEA FILE=HCA ABB=ON PLU=ON L14 AND L12
L16 3 SEA FILE=HCA ABB=ON PLU=ON L14 AND L13
L17 3 SEA FILE=HCA ABB=ON PLU=ON L15 OR L16
L19 15 SEA FILE=HCA ABB=ON PLU=ON L13 NOT L17

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L19 ANSWER 1 OF 15 HCA COPYRIGHT 2004 ACS on STN
140:322867 Disazo dyes, inks and ink-jet recording method. Mikoshiba,
Hisashi; Omatsu, Tadashi; Suzuki, Makoto; Matsuoka, Koushin; Motoki,
Masuji (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1408091 A1
20040414, 83 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB,
GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR. (English). CODEN:
EPXXDW. APPLICATION: EP 2003-29417 20020130. PRIORITY: JP 2001-24470
20010131; JP 2001-54764 20010228; JP 2001-69497 20010312; JP 2002-5043
20020111; JP 2002-5044 20020111; EP 2002-2270 20020130.

GI



AB Disclosed are black disazo dyes I, II, and III ($m, n = 0, 1$; $M = H$, monovalent ion; $X, Y =$ heterocyclic group). The dyes are suitable for water-based jet-printing inks with improved application and image properties. In an example, J-acid was diazotized and coupled with a pyrazole derivative to give a monoazo compound which was then coupled with diazotized 8-aminoquinoline to form a black disazo dye.

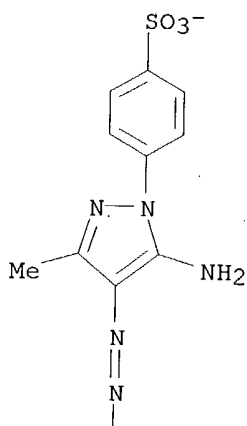
IT **678968-87-1**

RL: TEM (Technical or engineered material use); USES (Uses)
(dye; black disazo dyes for water-based jet-printing inks)

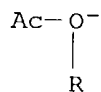
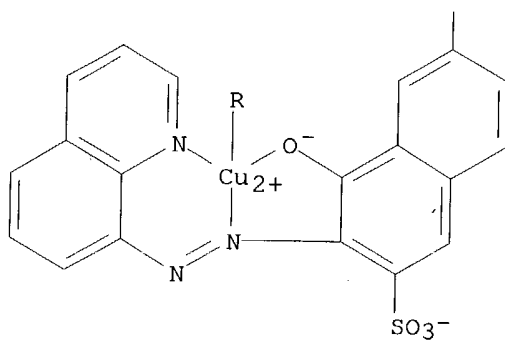
RN 678968-87-1 HCA

CN Cuprate(2-), (acetato- κO) [6-[[5-amino-3-methyl-1-(4-sulfophenyl)-1H-pyrazol-4-yl]azo]-4-(hydroxy- κO)-3-[(8-quinolinyl- κN)azo- $\kappa N1$]-2-naphthalenesulfonato(3-)]-, dihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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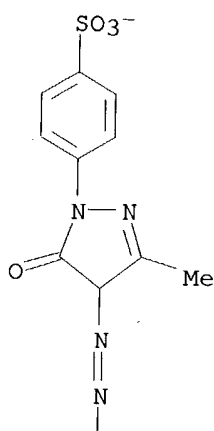
● 2 H⁺

IT 444997-00-6P

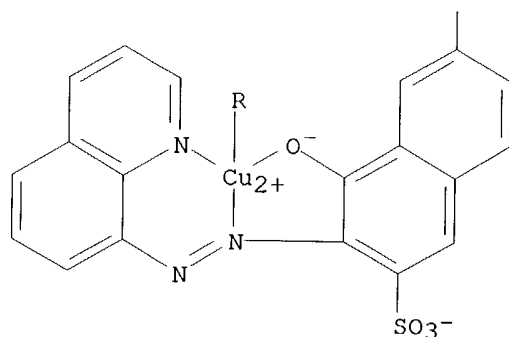
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (production of black disazo dyes for water-based jet-printing inks)

RN 444997-00-6 HCA
CN Cuprate(2-), (acetato-κO) [6-[[4,5-dihydro-3-methyl-5-oxo-1-(4-sulphophenyl)-1H-pyrazol-4-yl]azo]-4-(hydroxy-κO)-3-[(8-quinolinyl-κN)azo-κN1]-2-naphthalenesulfonato(3-)]-, dihydrogen (9CI)
(CA INDEX NAME)

PAGE 1-A



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● 2 H⁺

IC ICM C09B035-06

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 25, 27, 42

IT 678968-61-1 678968-62-2 678968-63-3 678968-64-4 678968-65-5
 678968-66-6 678968-67-7 678968-68-8 678968-69-9 678968-70-2
 678968-71-3 678968-73-5 678968-74-6 678968-75-7 678968-76-8
 678968-77-9 678968-78-0 678968-79-1 678968-80-4 678968-81-5
 678968-83-7 678968-84-8 678968-85-9 678968-86-0 **678968-87-1**
 678968-88-2 678968-89-3 678968-92-8 678968-94-0 678968-95-1
 678968-96-2 678968-97-3 678968-98-4 678968-99-5 678969-00-1
 678969-01-2 678969-02-3 678969-03-4 678969-04-5 678969-05-6
 678969-06-7 678969-07-8 678969-08-9 678969-09-0 678969-10-3
 678969-11-4 678969-12-5 678969-13-6 678969-14-7

RL: TEM (Technical or engineered material use); USES (Uses)
 (dye; black disazo dyes for water-based jet-printing inks)

IT **444997-00-6P** 444997-05-1P 444997-07-3P 678968-72-4P
 678968-82-6P 678968-90-6P 678968-93-9P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (production of black disazo dyes for water-based jet-printing inks)

L19 ANSWER 2 OF 15 HCA COPYRIGHT 2004 ACS on STN

140:17592 Bisazo and trisazo copper complex dyes, their production and their use. Pflieger, Dominique (Clariant International Ltd., Switz.). PCT Int. Appl. WO 2003099937 A1 20031204, 25 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT,

SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-IB2154 20030523. PRIORITY: GB 2002-12216 20020528.

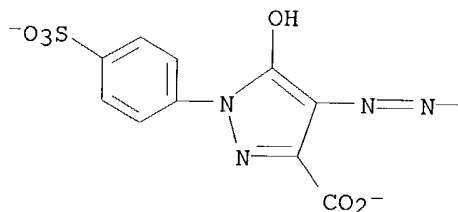
AB This invention relates to coppered bis- or trisazo dyes containing at least two (for bisazo) and at least three (for trisazo) alkyl-, alkoxy-, or arylammonium sulfonate groups or sulfonate groups with Rhodamine B type or Rosin Amine D type counterions. The invention also relates to various intermediates used in the preparation of the metalized dyes, to compns., and to processes for preparing the metalized dyes. The compds. are particularly suited for the application in lacquers. In an example, 4-(6,8-disulfo-2-naphthylazo)-2-methoxyaniline- γ acid was prepared, diazotized, and coupled with 2-naphthol-8-sulfonic acid. The product was complexed with Cu sulfate and neutralized with 3-(2-ethylhexyloxy)-1-propylamine to give a dye.

IT **629657-18-7DP**, salts with Primene 81R
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; production of bisazo and trisazo copper complex dyes)

RN 629657-18-7 HCA

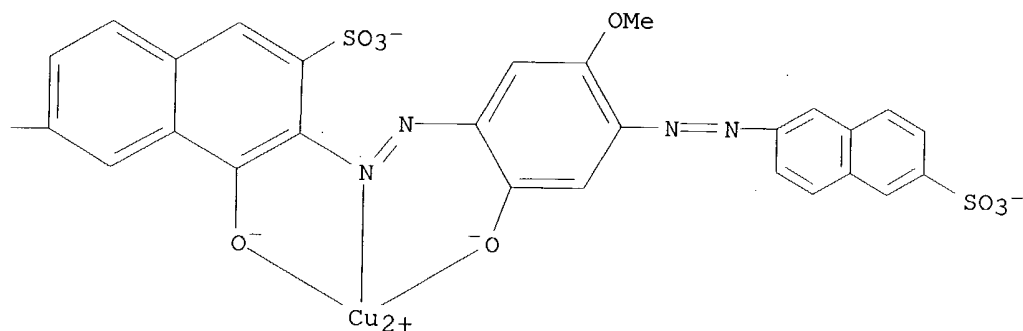
CN Cuprate(4-), [5-hydroxy-4-[[8-(hydroxy- κ O)-7-[[2-(hydroxy- κ O)-5-methoxy-4-[(6-sulfo-2-naphthalenyl)azo]phenyl]azo- κ N1]-6-sulfo-2-naphthalenyl]azo]-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



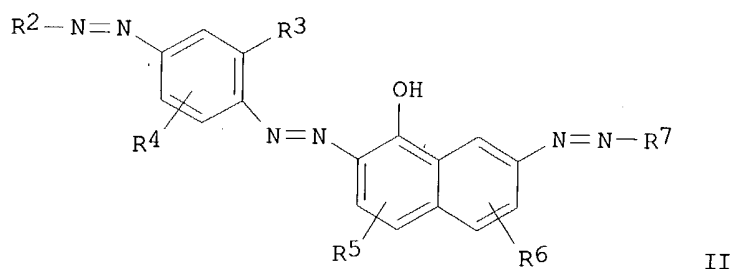
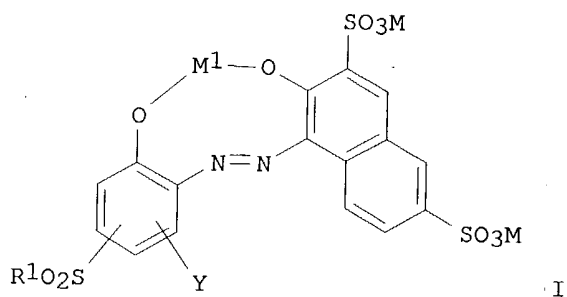
●4 H⁺

PAGE 1-B



- IC ICM C09B031-147
ICS C09B031-20; C09B031-22; C09B031-28
- CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 78
- IT 629657-12-1P **629657-18-7DP**, salts with Primene 81R
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; production of bisazo and trisazo copper complex dyes)
- L19 ANSWER 3 OF 15 HCA COPYRIGHT 2004 ACS on STN
138:5643 Black dye mixtures, their production and their use. Wuzik, Andreas; Geisenberger, Josef; Menzel, Heidemarie (Clariant G.m.b.H., Germany). PCT Int. Appl. WO 2002094943 A1 20021128, 30 pp. DESIGNATED STATES: W: BR, CA, CN, CZ, IN, JP, KR, MX, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (German). CODEN: PIXXD2.
APPLICATION: WO 2002-EP5009 20020507. PRIORITY: DE 2001-10125274 20010523.

GI



AB The invention relates to bicomponent mixts. of I (M = H, cation; M1 = metal atom; R1 = hydroxy, hydroxy derivative, vinyl, vinyl precursor; Y = H, alkyl, alkoxy, halogen) and II (R2 = aryl; R3 = organic group; hydroxy or hydroxy derivative, sulfo or sulfo derivative; R4, R5, R6 = H, halogen, organic group, hydroxy or hydroxy derivative, sulfo or sulfo derivative; R7 = organic cyclic

group). These dye mixts. are advantageously used for ink jet printing and provide high light-resisting and neutral black ink formulations. Examples were given which included I (M = Y = H; M1 = Cu; R1 = CH₂CH₂NHCH₂CO₂H) and various disazo dyes as II.

IT **477299-31-3 477299-33-5 477299-36-8**

RL: TEM (Technical or engineered material use); USES (Uses)
(black dye mixts., their production and their use)

RN 477299-31-3 HCA

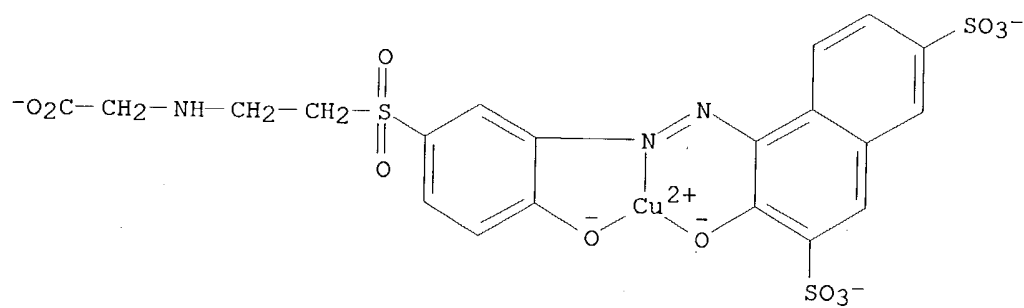
CN Cuprate(5-), [4-[[[7-[[[4-[(4,8-disulfo-2-naphthalenyl)azo]-2-(hydroxy-κO)-5-methylphenyl]azo-κN1]-8-(hydroxy-κO)-6-sulfo-2-naphthalenyl]azo]-5-hydroxy-1-(4-sulfo-phenyl)-1H-pyrazole-3-carboxylato(7-)]-], pentahydrogen, compd. with trihydrogen [N-[2-[[[4-(hydroxy-κO)-3-[[[2-(hydroxy-κO)-3,6-disulfo-1-naphthalenyl]azo-κN1]phenyl]sulfonyl]ethyl]glycinato(5-)]cuprate(3-) (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 477299-30-2

CMF C20 H14 Cu N3 O12 S3 . 3 H

CCI CCS



● 3 H^+

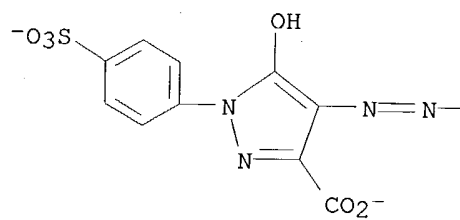
CM 2

CRN 477299-29-9

CMF C37 H19 Cu N8 O17 S4 . 5 H

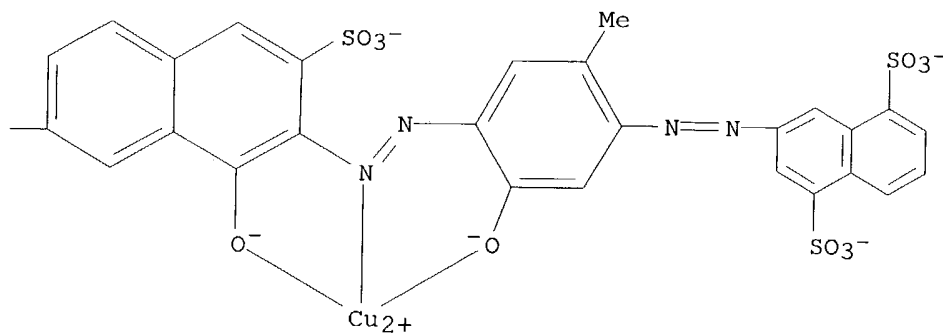
CCI CCS

PAGE 1-A



● 5 H^+

PAGE 1-B



RN 477299-33-5 HCA
 CN Cuprate(5-), [4-[[7-[[4-[(6,8-disulfo-2-naphthalenyl)azo]-2-(hydroxy- κ O)phenyl]azo- κ N1]-8-(hydroxy- κ O)-6-sulfo-2-naphthalenyl]azo]-5-hydroxy-1-(4-sulfo-phenyl)-1H-pyrazole-3-carboxylato(7-)]-, pentahydrogen, compd. with trihydrogen [N-[2-[[4-(hydroxy- κ O)-3-[[2-(hydroxy- κ O)-3,6-disulfo-1-naphthalenyl]azo- κ N1]phenyl]sulfonyl]ethyl]glycinato(5-)]cuprate(3-) (1:1) (9CI) (CA INDEX NAME)

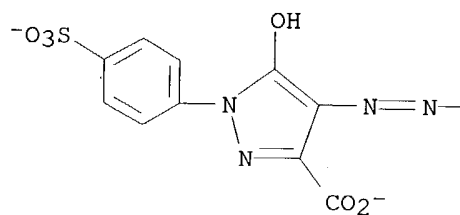
CM 1

CRN 477299-32-4

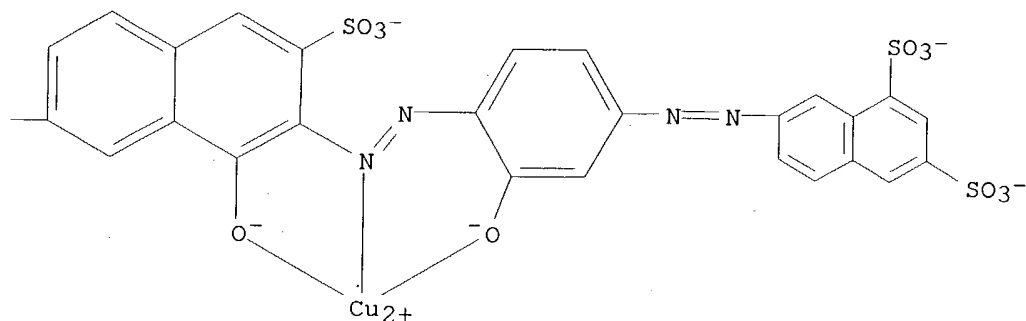
CMF C36 H17 Cu N8 O17 S4 . 5 H

CCI CCS

PAGE 1-A

● 5 H⁺

PAGE 1-B

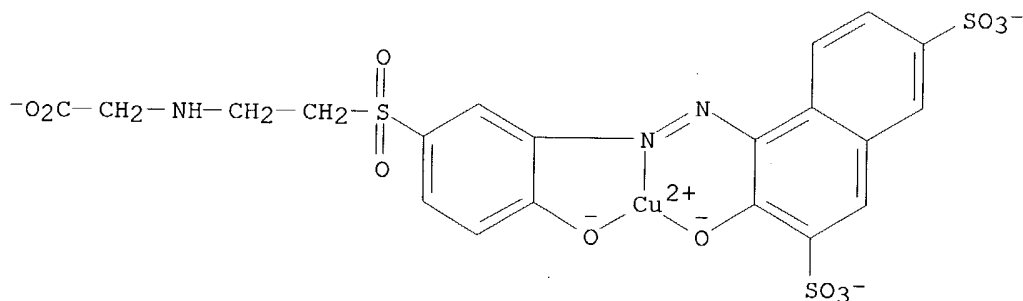


CM 2

CRN 477299-30-2

CMF C20 H14 Cu N3 O12 S3 . 3 H

CCI CCS

● 3 H⁺

RN 477299-36-8 HCA

CN Cuprate(4-), [5-hydroxy-4-[[8-(hydroxy-κO)-7-[[2-(hydroxy-κO)-4-[(3-sulfo-phenyl)azo]phenyl]azo-κN1]-6-sulfo-2-naphthalenyl]azo]-1-(4-sulfo-phenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen, mixt. with dihydrogen [3-(hydroxy-κO)-4-[[2-(hydroxy-κO)-5-[[2-[(2-hydroxyethyl)amino]ethyl]sulfonyl]phenyl]azo-κN1]-2,7-naphthalenedisulfonato(4-)]cuprate(2-) (9CI) (CA INDEX NAME)

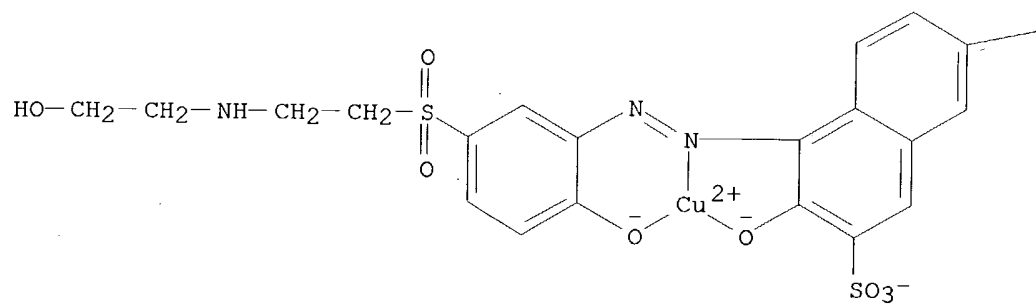
CM 1

CRN 477299-35-7

CMF C20 H17 Cu N3 O11 S3 . 2 H

CCI CCS

PAGE 1-A

● 2 H^+

PAGE 1-B

- SO_3^-

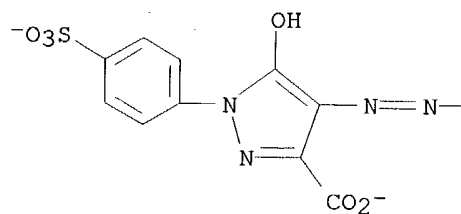
CM 2

CRN 477299-34-6

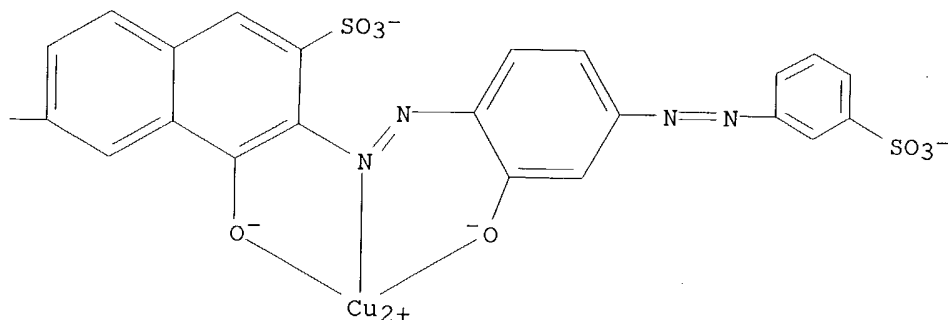
CMF C32 H16 Cu N8 O14 S3 . 4 H

CCI CCS

PAGE 1-A

● 4 H^+

PAGE 1-B



IC ICM C09B067-00

ICS C09D011-00

CC 42-6 (Coatings, Inks, and Related Products)

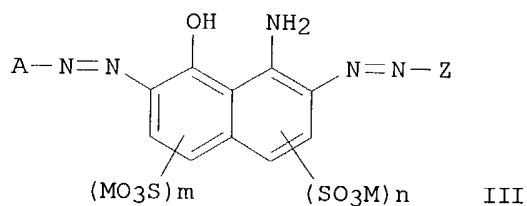
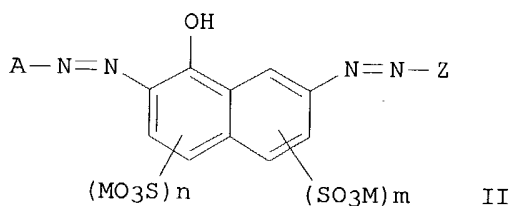
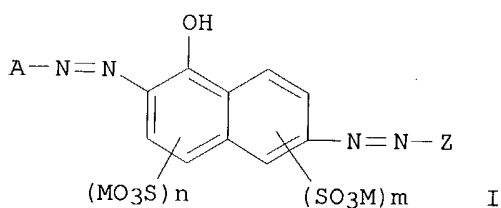
IT **477299-31-3 477299-33-5 477299-36-8**

RL: TEM (Technical or engineered material use); USES (Uses)
 (black dye mixts., their production and their use)

L19 ANSWER 4 OF 15 HCA COPYRIGHT 2004 ACS on STN

137:141846 Disazo dyes and jet printing inks containing them. Mikoshiba, Hisashi; Omatsu, Tadashi; Suzuki, Makoto; Matsuoka, Koushin; Motoki, Masuji (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1229083 A2 20020807, 78 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2002-2270 20020130. PRIORITY: JP 2001-24470 20010131; JP 2001-54764 20010228; JP 2001-69497 20010312; JP 2002-5043 20020111; JP 2002-5044 20020111.

GI



AB Disazo dyes (I, II, III; A, Z = monovalent heterocyclic group bonded to an azo group by a carbon atom of the monovalent heterocyclic group; m, n = 0, 1; M = H, monovalent pos. ion) are provided for use in jet-printing inks. I-III are black dyes with excellent fastness and application properties. In an example, a black dye was prepared using J-acid as the first diazo component, p-(5-hydroxy-3-methyl-1-pyrazolyl)benzenesulfonic acid as the coupling component, and 8-aminoquinoline as the second diazo component.

IT **444997-00-6P**

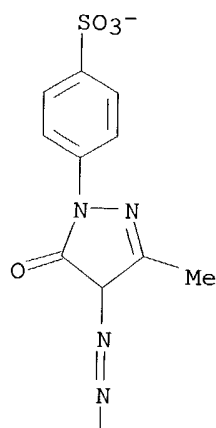
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dye; production of black disazo dyes for jet printing inks)

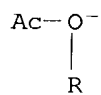
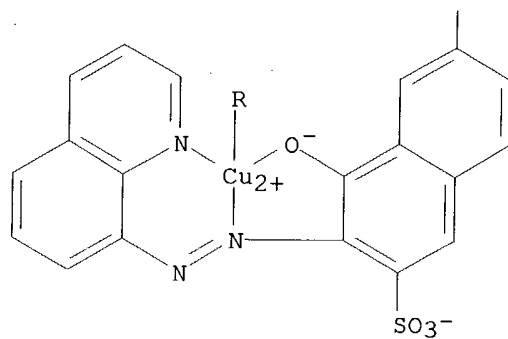
RN 444997-00-6 HCA

CN Cuprate(2-), (acetato-κO)[6-[[[4,5-dihydro-3-methyl-5-oxo-1-(4-sulfophenyl)-1H-pyrazol-4-yl]azo]-4-(hydroxy-κO)-3-[(8-quinolinyl-κN)azo-κN1]-2-naphthalenesulfonato(3-)]-, dihydrogen (9CI)
(CA INDEX NAME)

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PAGE 2-A

● 2 H^+

IC ICM C09B035-06
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 27, 28, 42

IT 444996-96-7P **444997-00-6P** 444997-04-0P 444997-05-1P
 444997-06-2P 444997-07-3P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; production of black disazo dyes for jet printing inks)

L19 ANSWER 5 OF 15 HCA COPYRIGHT 2004 ACS on STN
 136:136240 Mixtures of water-soluble, reactive azo dyes, their production and their use. Steckelberg, Joachim; Schumacher, Christian (Dystar Textilfarben G.m.b.H. & Co. Deutschland K.-G., Germany). PCT Int. Appl. WO 2002010289 A1 20020207, 47 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (German). CODEN: PIXXD2. APPLICATION: WO 2001-EP8595 20010725. PRIORITY: DE 2000-10037075 20000729.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

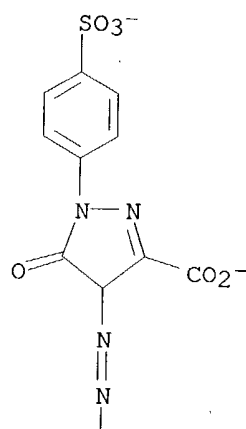
AB The invention relates to mixts. containing dyes of general formula I and II (A = fiber-reactive group; R1 = H, C1-4-alkyl, C1-4-alkoxy, sulfo, Br, Cl; R2 = H, C1-6-alkyl, carboxy, carboxyalkyl; R3 = H, sulfo, SO2Y; R4, R6 = H, sulfo; R5 = H, Me, carboxy, sulfo, SO2Y; R7 = R8 = H, alkyl, sulfo, Cl; M = H, alkali, ammonium, alkaline earth equivalent; X = C, SO2; Y = vinyl or vinyl-forming group) and their production and their use in reactive dyeing or printing of textiles. The mixts. show a synergistic effect in color strength. Examples of production of an example of I and of II and their application as a 2:1 mixture were given.

IT **87140-43-0P**
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; production of mixts. of reactive formazan and disazo dyes and their use)

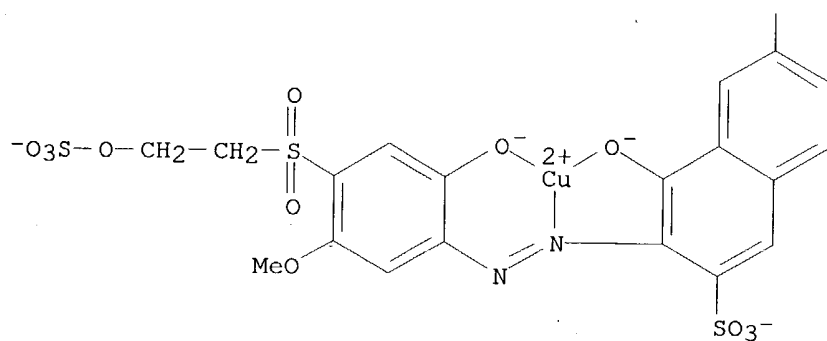
RN 87140-43-0 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy-κO)-7-[[2-(hydroxy-κO)-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo-κN1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrasodium (9CI) (CA INDEX NAME)

PAGE 1-A



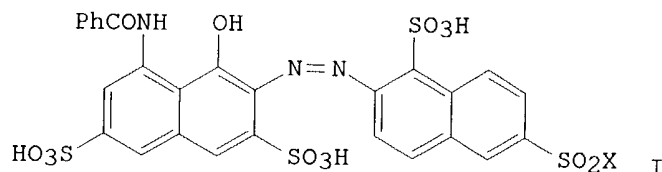
PAGE 2-A

● 4 Na⁺

IC ICM C09B067-22
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
 Section cross-reference(s): 25, 40
 IT **87140-43-0P** 101678-62-0P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; production of mixts. of reactive formazan and disazo dyes and their use)

L19 ANSWER 6 OF 15 HCA COPYRIGHT 2004 ACS on STN
 111:216123 Use of water-soluble dyes in jet-printing inks, the resulting inks,
 and some of the dyes. Ritter, Josef; Sieber, Alexander (Hoechst A.-G.,
 Fed. Rep. Ger.). Eur. Pat. Appl. EP 312004 A2 19890419, 19 pp.
 DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI. (German). CODEN: EPXXDW.
 APPLICATION: EP 1988-116922 19881012. PRIORITY: DE 1987-3734528 19871013.

GI



AB Storage-stable, nonclogging, waterborne inks providing highly glossy,
 water- and light-resistant prints by jet printing contain water-soluble dyes
 with azo, metalized azo, phthalocyanine, anthraquinone, dioxazine, or
 Cu-formazan base structure and having 1-4 SO₂X groups, where X = CH₂,
 CH₂CH₂OR, CH₂CH₂SR, CH₂CH₂NRR₁, or CH₂CH₂NR₂NRR₁ and R-R₂ are H or
 hydrocarbyl (or NRR₁ may be a heterocyclic ring), and ≥1 SO₃H
 group. Thus, inks containing diethylene glycol 20, water 79,
 poly(vinylpyrrolidone) 1, and azo dyes I [X = (CH₂)₂NH(CH₂)₁₅Me,
 (CH₂)₂N(CH₂CH₂OH)₂, or (CH₂)₂O(CH₂)₂OMe] 4 parts exhibited good
 performance in 96-h intermittent or continuous use in a xerog. printer
 using a drop-on-demand process and no precipitate after 1 yr storage and
 provided
 glossy magenta print with good water resistance and legibility after 100 h
 in a xenon Fadeometer.

IT **123698-78-2 123698-79-3**

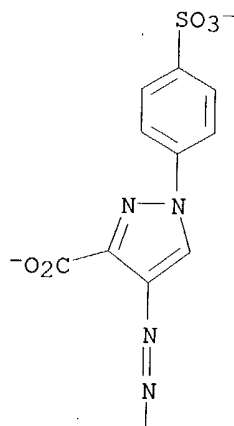
RL: USES (Uses)

(dye, manufacture of water-soluble, for jet-printing inks)

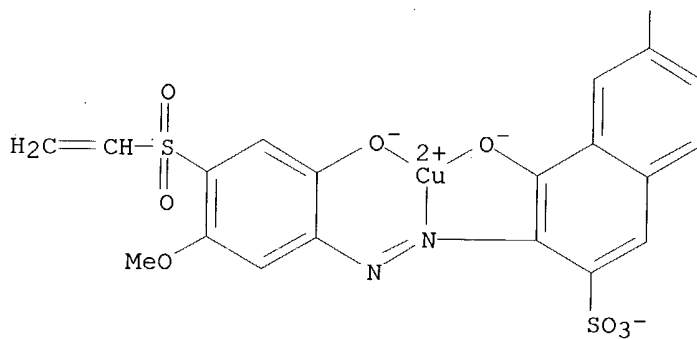
RN 123698-78-2 HCA

CN Cuprate(3-), [4-[[7-[[4-(ethenylsulfonyl)-2-hydroxy-5-methoxyphenyl]azo]-8-
 hydroxy-6-sulfo-2-naphthalenyl]azo]-1-(4-sulfophenyl)-1H-pyrazole-3-
 carboxylato(5-)]-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A

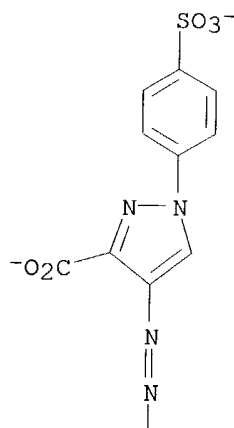


PAGE 2-A

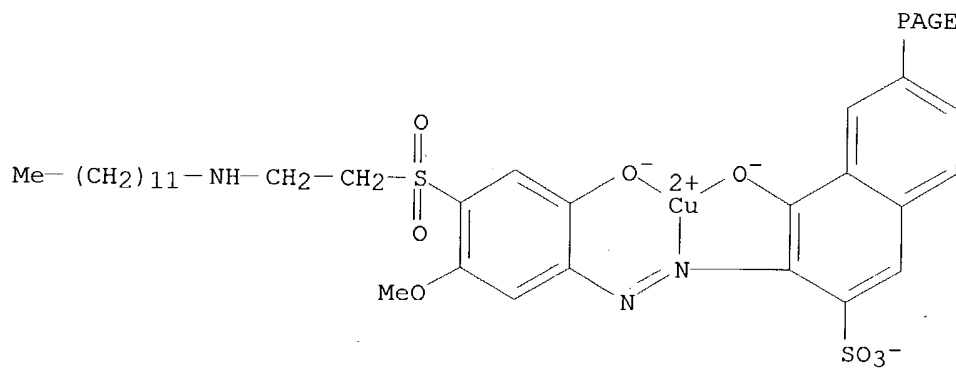
● 3 H⁺

RN 123698-79-3 HCA
 CN Cuprate(3-), [4-[[7-[[4-[[2-(dodecylamino)ethyl]sulfonyl]-2-hydroxy-5-methoxyphenyl]azo]-8-hydroxy-6-sulfo-2-naphthalenyl]azo]-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(5-)]-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

● 3 H⁺

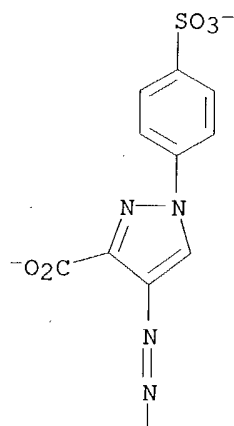
IT 91629-89-9

RL: RCT (Reactant); RACT (Reactant or reagent)
(elimination reaction of)

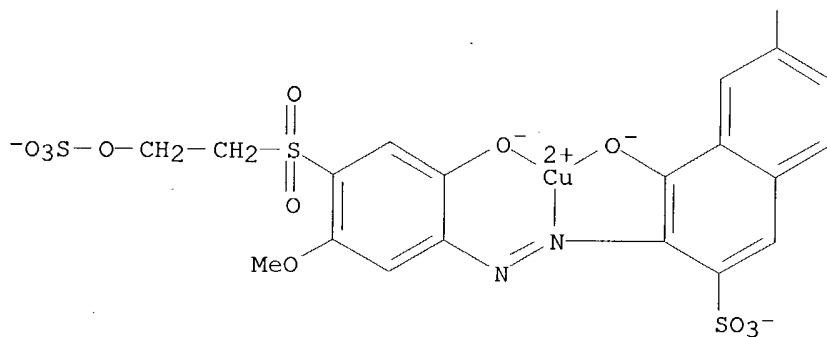
RN 91629-89-9 HCA

CN Cuprate(4-), [4-[[8-hydroxy-7-[[2-hydroxy-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]-6-sulfo-2-naphthalenyl]azo]-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

● 4 H⁺

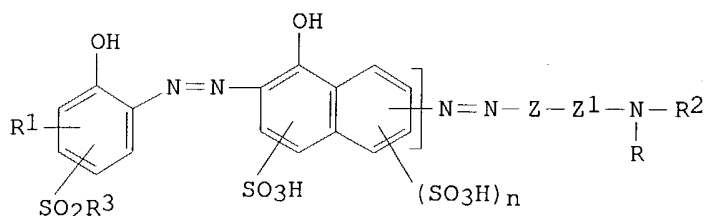
IC ICM C09D011-00
 ICS C09B069-00; C09B062-503
 CC 42-12 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 41
 IT 123690-27-7 123690-28-8 123690-31-3 123690-32-4 123690-33-5
 123690-36-8 123690-37-9D, N-fatty alkyl derivs. **123698-78-2**
123698-79-3 123715-50-4 123715-51-5
 RL: USES (Uses)
 (dye, manufacture of water-soluble, for jet-printing inks)
 IT 68400-00-0 **91629-89-9** 112096-08-9
 RL: RCT (Reactant); RACT (Reactant or reagent)

(elimination reaction of)

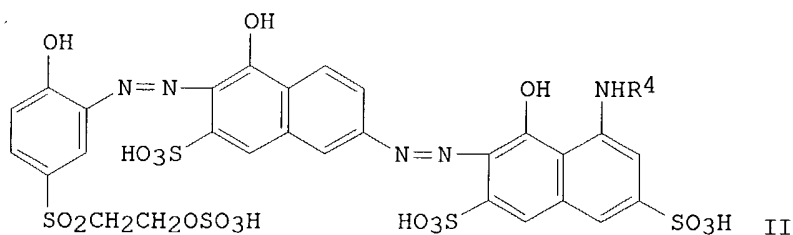
L19 ANSWER 7 OF 15 HCA COPYRIGHT 2004 ACS on STN

106:103809 Reactive disazo metal complex dyes. Jaeger, Horst (Bayer A.-G., Fed. Rep. Ger.). Ger. Offen. DE 3519551 A1 19861204, 31 pp. (German).
 CODEN: GWXXBX. APPLICATION: DE 1985-3519551 19850531.

GI



I



II

AB Cu, Co, and Cr complexes of reactive disazo dyes I ($n = 0, 1$; $R = H$, (un)substituted C1-4 alkyl; $R1 = H$, substituent; $R2 =$ pyrimidine reactive component containing ≥ 1 F leaving under dyeing conditions; $R3 = HC:CH2$, $CH2CH2R5$; $R5 =$ leaving group; $Z =$ hydroxynaphthalene, pyrazole, or pyridone bridging group; $Z1 =$ direct bond or divalent bridging group) are useful for dyeing and printing of HO group- or amide group-containing materials. Reaction of a dye mixture II ($R4 = 71.8 \text{ mol\%}$ 2,5-dichloro-4-fluoropyrimidin-6-yl and 28.2 mol\% 5,6-dichloro-2-fluoropyrimidin-4-yl groups) with $CuSO4 \cdot 5H2O$ gave the 1:1 Cu complex, which dyed wool in a navy blue shade.

IT 107102-29-4

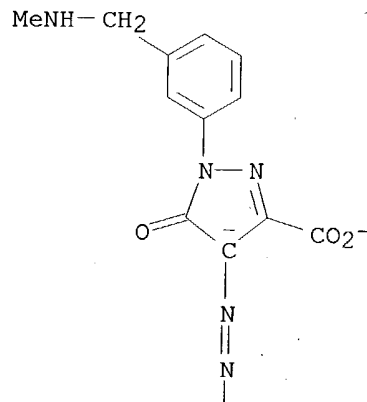
RL: USES (Uses)

(condensation of, with chlorotrifluoropyrimidine)

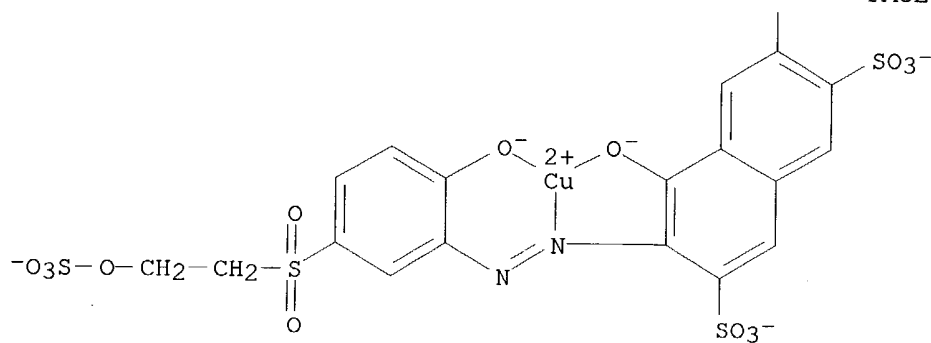
RN 107102-29-4 HCA

CN Cuprate(5-), [4,5-dihydro-4-[[8-hydroxy-7-[[2-hydroxy-5-[[2-(sulfoxy)ethyl]sulfonyl]phenyl]azo]-3,6-disulfo-2-naphthalenyl]azo]-1-[3-[(methylamino)methyl]phenyl]-5-oxo-1H-pyrazole-3-carboxylato(7-)]-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

● 5 H⁺

IT 107102-30-7P

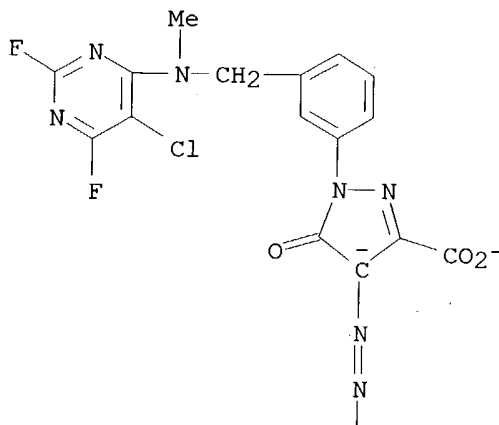
RL: PREP (Preparation)

(manufacture of, as brown dye for amide- and/or hydroxyl group-containing materials)

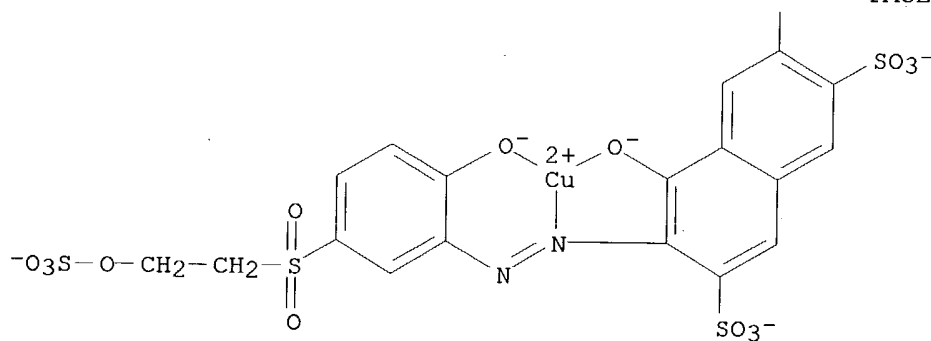
RN 107102-30-7 HCA

CN Cuprate(5-), [1-[3-[[[(5-chloro-2,6-difluoro-4-pyrimidinyl)methylamino]methyl]phenyl]-4,5-dihydro-4-[[8-hydroxy-7-[[2-hydroxy-5-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]-3,6-disulfo-2-naphthalenyl]azo]-5-oxo-1H-pyrazole-3-carboxylato(7-)]-], pentahydrogen (9CI) (CA INDEX NAME)

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● 5 H⁺

IC ICM C09B062-255
 ICS C09B045-24; C09B031-068; C09B031-14; D06P001-382; D06P001-10;
 D06P003-10; D06P003-66
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic
 Sensitizers)
 Section cross-reference(s): 40
 IT **107102-29-4**
 RL: USES (Uses)
 (condensation of, with chlorotrifluoropyrimidine)

IT 107102-30-7P

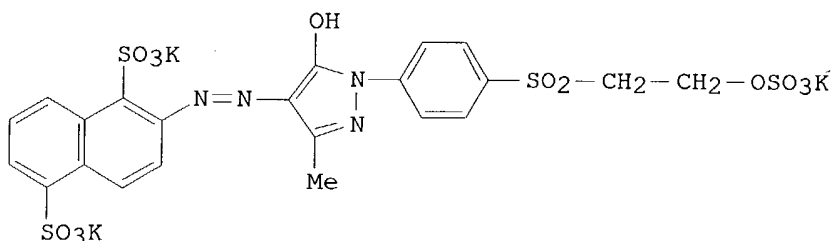
RL: PREP (Preparation)

(manufacture of, as brown dye for amide- and/or hydroxyl group-containing materials)

L19 ANSWER 8 OF 15 HCA COPYRIGHT 2004 ACS on STN

106:51678 Low-salt, aqueous fiber-reactive dye formulations. Meininger, Fritz; Opitz, Konrad; Semel, Joachim (Hoechst A.-G., Fed. Rep. Ger.). Ger. Offen. DE 3424506 A1 19860109, 22 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1984-3424506 19840704.

GI



I

AB Low-salt-content aqueous compns. of fiber-reactive dyes (MO3S)_mZR_n (M = H, alkali, alkaline earth metal; m = 1-8; n = 1-3; R = fiber-reactive group; Z = anthraquinone, formazan, dioxazine, monoazo, disazo, trisazo, phthalocyanine, or metal complex azo dye residue) contain 0.1-6.0% of ≥ 1 pH 3-7 buffer, 0.001-1.0% ≥ 1 alkali or alkaline earth metal halide, and are prepared by electrodialysis. The formulations are useful for dyeing or printing wool, silk, polyamide, and natural and/or regenerated cellulose textiles. Thus, 600 parts of a powdered dye mixture containing KCl 12.9, NaCl 4.1, and I 83% (Cl⁻ content 8.94%) was dissolved in 2400 parts water and charged to an electrodialysis apparatus having a membrane surface area of 814 cm² and operating at 28 V. The anion-exchange membrane was a styrene-butadiene copolymer with quaternary ammonium groups anchored to a PVC resin, and had an exchange capacity of 1.9 equiv/kg, a H₂O content of 19%, and a resistance of 2-4.5 Ω /cm². The cation-exchange membrane was a sulfonated styrene-butadiene copolymer anchored to a PVC resin, and had an exchange capacity of 2.4 equiv/kg, a H₂O content of 25%, and a resistance of 2.9 Ω /cm². Dialysis was continued until there was no further elec. conductivity decrease, for 1-2 h, of the dye solution; this was realized after 16 h. After electrodialysis, 2400 parts of this dye solution had a Cl⁻ content of 0.059%, which was equivalent to a

96.7% chloride reduction The liquid dye preparation was placed in a close container

and stored for 3 mo at 20°, 2 wk at 0°, or 6 wk at 50° with no observed change in pH.

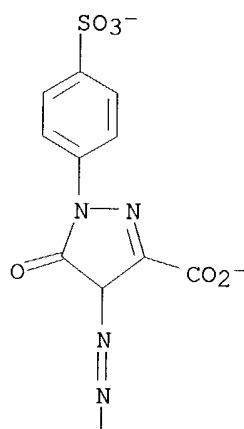
IT 87140-43-0P

RL: PUR (Purification or recovery); PREP (Preparation)
(purification of, by electrodialysis)

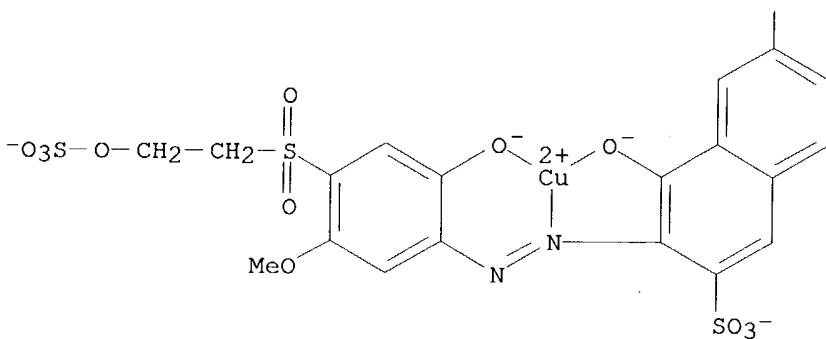
RN 87140-43-0 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy- κ O)-7-[[2-(hydroxy- κ O)-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo- κ N1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrasodium (9CI) (CA INDEX NAME)

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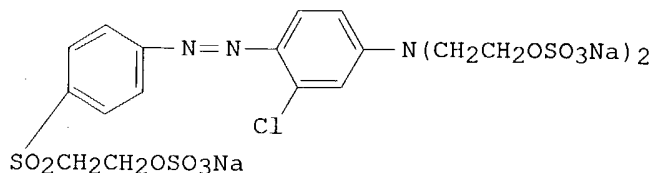
PAGE 2-A

● 4 Na⁺

IC ICM C09B067-44
 ICS C09B067-26; D06P001-38; D06P003-10; D06P003-66
 CC 41-1 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
 Section cross-reference(s): 40
 IT 84267-51-6P **87140-43-0P** 98114-32-0P 105513-40-4P
 105513-41-5P 105513-42-6P 105915-47-7P 106329-51-5P
 RL: PUR (Purification or recovery); PREP (Preparation)
 (purification of, by electrodialysis)

L19 ANSWER 9 OF 15 HCA COPYRIGHT 2004 ACS on STN
 105:7899 Liquid, aqueous dye preparations with a low salt content. Opitz, Konrad; Schwaiger, Guenther; Pohlmann, Heinrich; Sittig, Manfred; Fabel, Christian; Wilhelm, Siegfried; Mitter, Franz (Hoechst A.-G., Fed. Rep. Ger.). Eur. Pat. Appl. EP 158233 A2 19851016, 61 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI. (German). CODEN: EPXXDW. APPLICATION: EP 1985-103727 19850328. PRIORITY: DE 1984-3413315 19840409; DE 1984-3426931 19840721.

GI



AB Na2SO4 is removed from aqueous solns. of anionic or cationic dyes, especially anionic fiber-reactive dyes of monochlorotriazine or sulfatoethylsulfonyl type, containing ≤ 2 weight% chloride, by cooling the solution to a temperature between $+5^\circ$ and -15° and separating, e.g. filtering, the Na2SO4.10H2O which ppts. The aqueous preps. contain < 4 weight% Na2SO4 and are stable during storage at temps. up to 50° and at low temps., e.g. $+5^\circ$ to -5° . For example, 1420 parts synthesis solution containing I 10.33, NaCl 0.14, and Na2SO4 16.3% was stirred and kept at 0° for 8 h, filtered to remove 498 parts precipitated Na2SO4.10H2O, and mixed (922 parts) with NaH2PO4 7, Na2HPO4 7, and H2O 10 parts to give 946 parts solution (pH 6.2) which contained I 15.5, Na2SO4 1.2, and $< 0.22\%$ NaCl and was stable for ≥ 6 mo at 20° , ≥ 6 wk at 50° , and > 2 wk at 0° . The solution could be used to prepare dyebaths, padbaths, or printing pastes.

IT **87140-43-0**

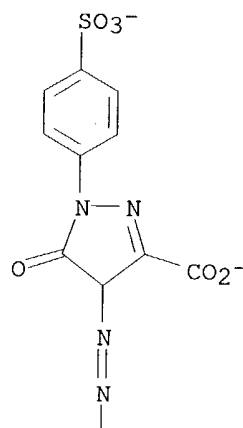
RL: USES (Uses)

(aqueous solns. of, removal of sodium sulfate from, by crystallization)

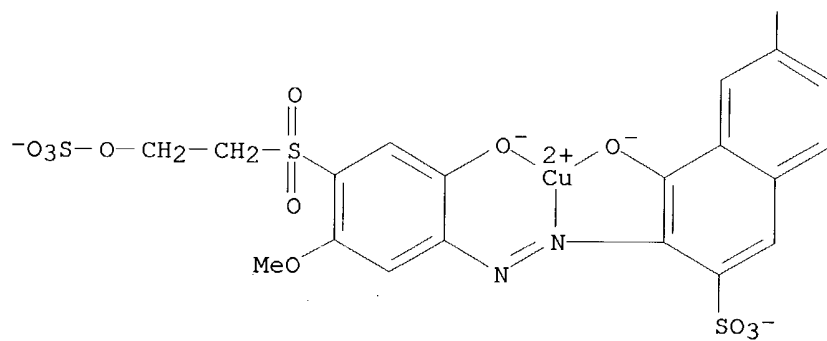
RN 87140-43-0 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy- κ O)-7-[[2-(hydroxy- κ O)-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo- κ N1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrasodium (9CI) (CA INDEX NAME)

PAGE 1-A



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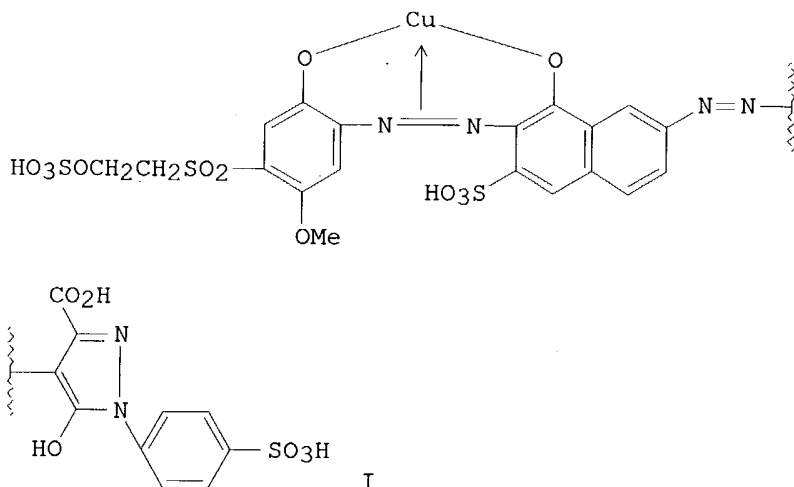
● 4 Na⁺

IC ICM C09B067-26
 ICS C09B062-00; C09B067-54
 CC 40-6 (Textiles)
 Section cross-reference(s): 41
 IT 17095-24-8 24199-80-2 25664-81-7 84229-70-9 84267-51-6
87140-43-0 98114-32-0 101485-27-2 101678-62-0
 RL: USES (Uses)
 (aqueous solns. of, removal of sodium sulfate from, by crystallization)

L19 ANSWER 10 OF 15 HCA COPYRIGHT 2004 ACS on STN

100:211577 Reactive dye liquors. (Hoechst A.-G., Fed. Rep. Ger.). Jpn. Kokai Tokkyo Koho JP 59025838 A2 19840209 Showa, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1983-123531 19830708. PRIORITY: DE 1974-2417253 19740409; DE 1974-2417254 19740409; DE 1974-2417256 19740409; DE 1974-2454893 19741120.

GI



AB Aqueous reactive dye liquors having excellent storability contain 5-35% dye and 1-5% Na or K acetate, oxalate, borate, and/or phosphate at pH 3-7. Thus, 186 parts aqueous solns. containing 25.7% I [57602-19-4] was treated with 5 parts Na2HPO4 to give a composition having pH 6.2 and storable in a closed container at 50° for 6 wk. This composition gave a cotton dyeing with color yield comparable to that dyed with the same amount (in terms of I) of powdered I composition

IT **57602-19-4**

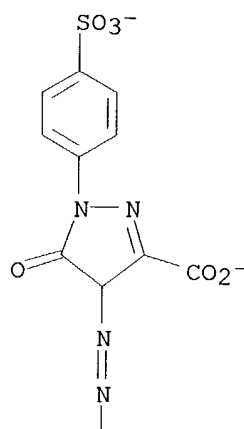
RL: USES (Uses)

(dyeing with, of cotton, storable liquors for)

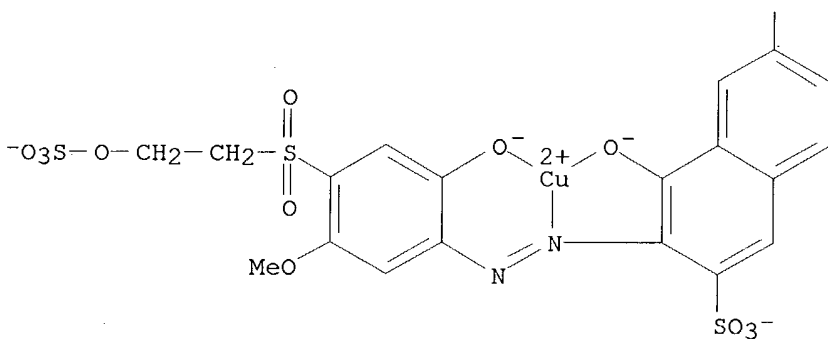
RN 57602-19-4 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy-κO)-7-[[2-(hydroxy-κO)-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo-κN1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen (9CI) (CA INDEX NAME)

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● 4 H⁺

IC C09B067-26

CC 40-6 (Textiles)

IT **57602-19-4**

RL: USES (Uses)

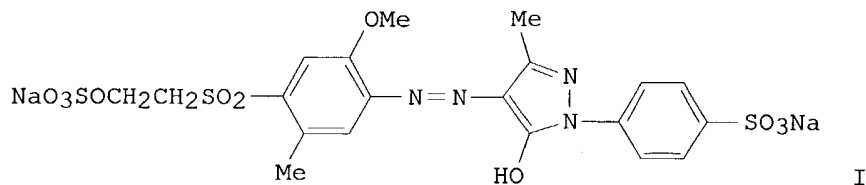
(dyeing with, of cotton, storable liquors for)

L19 ANSWER 11 OF 15 HCA COPYRIGHT 2004 ACS on STN

99:124023 Aqueous reactive dye preparations. Pohlmann, Heinrich; Gruenbein, Wolfgang; Walch, Axel; Wildhard, Juergen; Meininger, Fritz; Opitz, Konrad; Junghanns, Ernst (Hoechst A.-G. , Fed. Rep. Ger.). Ger. Offen. DE 3148878

Al 19830623, 10 pp. (German). CODEN: GWXXBX. APPLICATION: DE
1981-3148878 19811210.

GI



AB Aqueous reactive dyes, especially those of vinyl sulfone type, are concentrated by a room-temperature membrane separation process which also removes inorg. salts and other impurities. The resultant dye compns. are storage stable and can be used for dyeing and printing of cellulose, wool, etc. Thus, I [87074-89-3] was prepared as a 12% aqueous solution (1500 g) and maintained under 40 bar in a pressure permeation cell (polyamide membrane) for 9 h during which 675 g salt-containing solution passed through the membrane. The 825 g dye solution remaining in the cell contained 22% I and was adjusted to pH 6.0 by addition of Na2HPO4 to give a composition which exhibited good storage stability at 50° and at room temperature and could be used directly in dyebaths, pad baths, or printing pastes.

IT **87140-43-0**

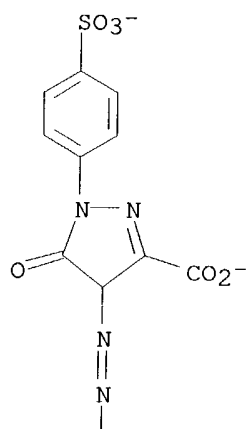
RL: USES (Uses)

(aqueous concs., preparation of storage-stable, by reverse osmosis-ultrafiltration)

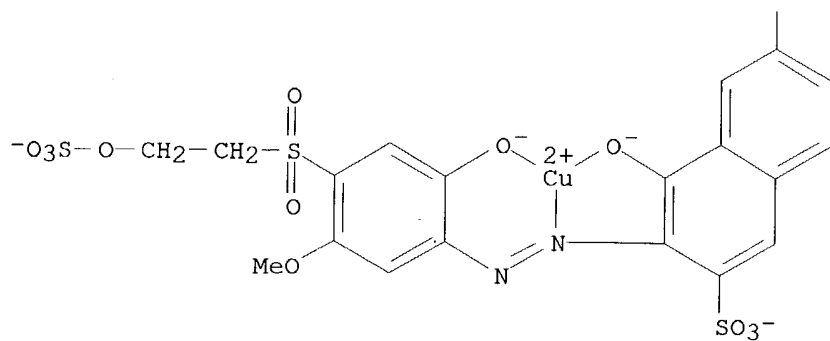
RN 87140-43-0 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy-κO)-7-[[2-(hydroxy-κO)-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo-κN1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrasodium (9CI) (CA INDEX NAME)

PAGE 1-A



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● 4 Na⁺

IC C09B067-54; C09B067-44; C09B062-44; D06P001-384; D21H001-46; D21H003-80
 CC 40-6 (Textiles)
 Section cross-reference(s): 41
 IT 17095-24-8 20298-05-9 24199-80-2 25664-81-7 72187-36-1
87140-43-0
 RL: USES (Uses)
 (aqueous concs., preparation of storage-stable, by reverse osmosis-ultrafiltration)

L19 ANSWER 12 OF 15 HCA COPYRIGHT 2004 ACS on STN

85:110017 Aqueous solutions of fiber-reactive dyes. (Hoechst A.-G., Fed. Rep. Ger.). Belg. BE 827751 19751009, 31 pp. (French). CODEN: BEXXAL.
APPLICATION: BE 1975-155251 19750409.

AB Aqueous solns. of (sulfatoethyl)sulfonyl group-containing azo and disazo dyes containing .apprx.25% dye which are storage-stable at 50° for 6 weeks are manufactured by concentrating a clarified solution of prepared dye in the presence of a buffer to maintain pH at .apprx.6 or by adding previously dried dye to the clarified mixture to give the desired concentration in the presence of a buffer.

IT **60373-15-1**

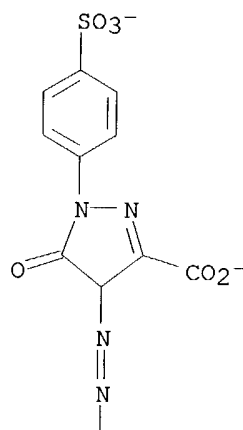
RL: USES (Uses)

(concentrated, storage-stable aqueous solns. of)

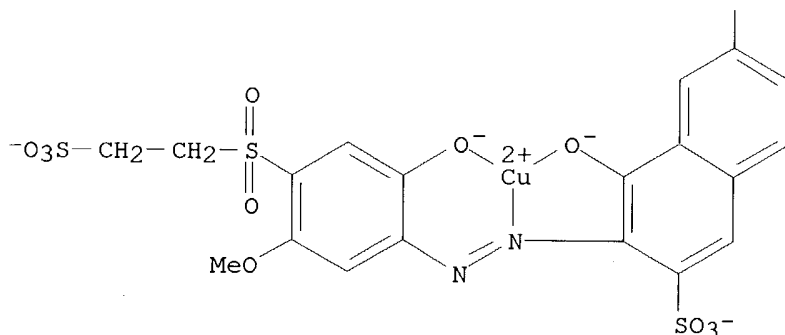
RN 60373-15-1 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy-κO)-7-[[2-(hydroxy-κO)-5-methoxy-4-[(2-sulfoethyl)sulfonyl]phenyl]azo-κN1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

● 4. H⁺

IC C09B
 CC 39-7 (Textiles)
 IT 28306-05-0 55909-92-7 60361-94-6 60361-95-7 60361-96-8
60373-15-1
 RL: USES (Uses)
 (concentrated, storage-stable aqueous solns. of)

L19 ANSWER 13 OF 15 HCA COPYRIGHT 2004 ACS on STN

84:32504 Liquid dye preparation of a fiber-reactive dye. Schlaefer, Ludwig; Opitz, Konrad (Hoechst A.-G., Fed. Rep. Ger.). Ger. Offen. DE 2417254 19751023, 12 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1974-2417254 19740409.

GI For diagram(s), see printed CA Issue.

AB Storage-stable solns. of reactive dye (I) [57602-19-4] (20.5-25.7 weight %) which remained unchanged during storage at 20° for 3 months in a sealed container were prepared by adjusting the pH of an aqueous solution to 5.9-6.2 with 1-5 weight % of a buffer, such as Na₂HPO₄ or

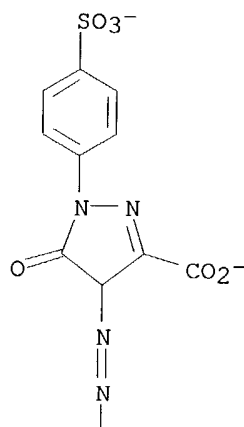
Na borate, and the solns. dyed cotton the same shade and strength as a powdered preparation which was adjusted to the concentration of the liquid preparation in the dye bath.

IT **57602-19-4**
 RL: USES (Uses)
 (aqueous storage-stable solns. of, for cotton dyeing)

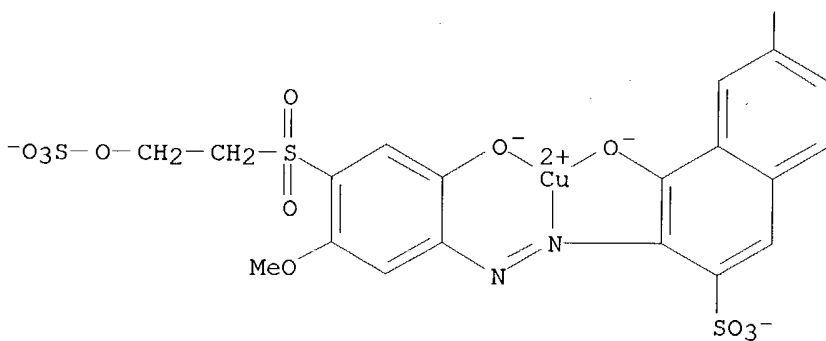
RN 57602-19-4 HCA

CN Cuprate(4-), [4,5-dihydro-4-[[8-(hydroxy-κO)-7-[[2-(hydroxy-κO)-5-methoxy-4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo-κN1]-6-sulfo-2-naphthalenyl]azo]-5-oxo-1-(4-sulfophenyl)-1H-pyrazole-3-carboxylato(6-)]-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

● 4 H⁺

IC C09B; D06P

CC 39-7 (Textiles)

IT **57602-19-4**

RL: USES (Uses)

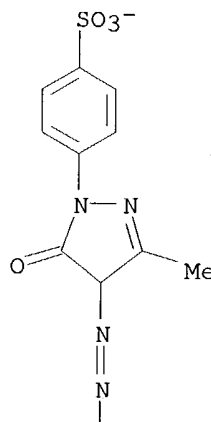
(aqueous storage-stable solns. of, for cotton dyeing)

L19 ANSWER 14 OF 15 HCA COPYRIGHT 2004 ACS on STN

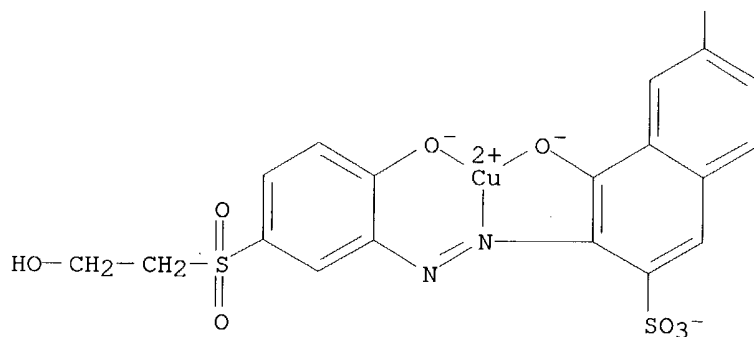
68:115688 Fiber reactive disazo dyes. (Farbwerke Hoechst A.-G.). Fr. FR
 1490446 19670728, 21 pp. (French). CODEN: FRXXAK. PRIORITY: DD 19650828
 - 19660107 19660107.

- GI For diagram(s), see printed CA Issue.
- AB 1:1 Cu, 1:2 Cr, and 1:2 Co complexes of I, where 1 of R1, R2, R3, and R5 is SO₂CH₂CH₂X (X = OSO₃H, SSO₃H, or NEt₂) are brown dyes for cotton. Thus, 23.9 parts 1,3,7-HO(HO₃S)C₁₀H₅NH₂ was diazotized and coupled with 17.5 parts 1-(p-sulfophenyl)-3-methyl-5-pyrazolone, the monoazo dye dissolved in 500 parts H₂O, coupled with the diazonium salt from 33 parts 94% 2,5-MeO(HO₃SOCH₂CH₂SO₂)C₆H₃NH₂ to give I (R1 = R2 = R4 = R6 = H, R3 = SO₂CH₂CH₂OSO₃H) Q), R5 = SO₃H, R7 = Me) isolated as the K salt (II), a dark powder, reddish brown in H₂O, red-brown on cotton. A mixture of 72.9 parts II, 500 parts H₂O, 25 parts CuSO₄.5H₂O, and 20 parts crystallized NaOAc was refluxed for 11.5 hrs. to give the Cu complex of II, a dark violet-brown powder, red-brown in H₂O, which yields red-brown prints fast to light and washing. Similarly, other metallized I were prepared (R1-R7, metal and shade given): SO₃H, H, SO₃H, H, Q, H, Me, Cu, reddish brown; H, H, Q, SO₃H, SO₃H, Me, Me, Cu, violet-brown; H, Q, OMe, H, SO₃H, H, Me, Cu, dark brown, Q, H, OMe, H, SO₃H, H, Me, Cu, red-brown; H, H, SO₂CH₂CH₂SSO₃H (Z), SO₃H, H, H, Me, Cu, red-brown; H, H, Z, SO₃H, H, H, Me, Cu, -; H, H, SO₂CH₂CH₂NEt₂, SO₃H, H, H, Me, Cu, red-brown; H, H, Q, H, SO₃H, H, CO₂H, Cu, red brown (Cr gray); H, H, Q, SO₃H, H, Cl, Me, Co, brown. Similarly was prepared III, a dark violet powder, red-brown in H₂O and brown-violet on cotton.
- IT **18346-16-2P 18346-17-3P 18400-76-5P**
18400-78-7P 18400-79-8P 18400-80-1P
18516-97-7P 21307-01-7P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of)
- RN 18346-16-2 HCA
- CN Copper, [dihydrogen 4-hydroxy-3-[[2-hydroxy-5-[(2-hydroxyethyl)sulfonyl]phenyl]azo]-6-[[3-methyl-5-oxo-1-(p-sulfophenyl)-2-pyrazolin-4-yl]azo]-2-naphthalenesulfonato(2-)]- (8CI) (CA INDEX NAME)

PAGE 1-A

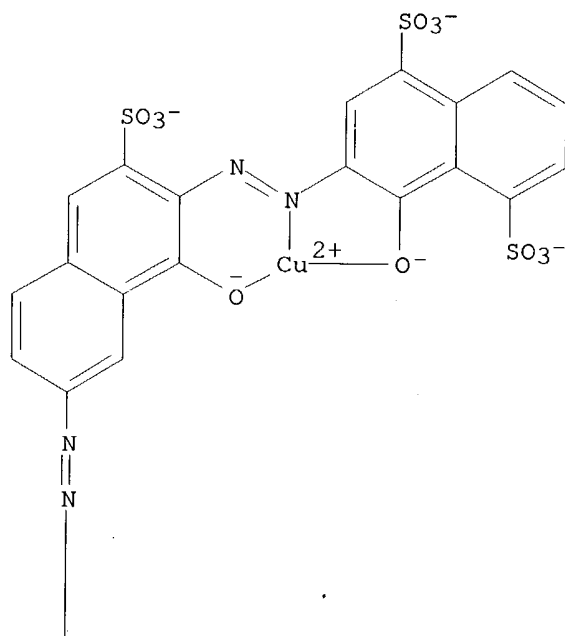


PAGE 2-A

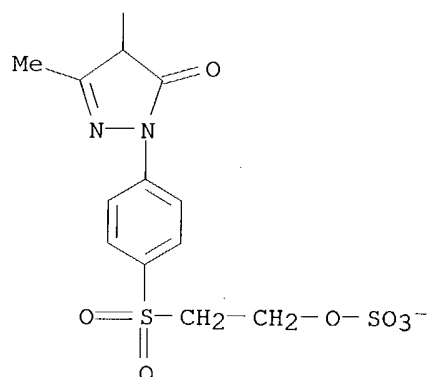
● 2 H⁺

RN 18346-17-3 HCA
 CN Copper, [trihydrogen 4-hydroxy-3-[[1-hydroxy-7-[[1-[p-[(2-hydroxyethyl)sulfonyl]phenyl]-3-methyl-5-oxo-2-pyrazolin-4-yl]azo]-3-sulfo-2-naphthyl]azo]-1,5-naphthalenedisulfonato(2-)]-, mono(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

PAGE 1-A



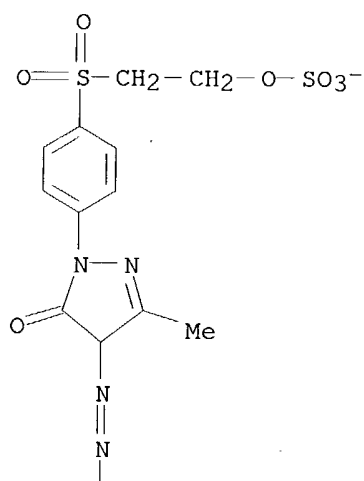
PAGE 2-A

● 4 H⁺

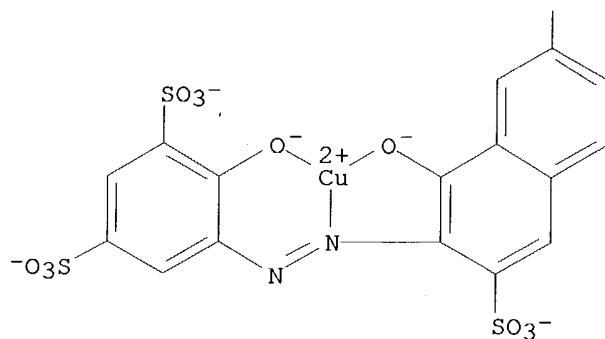
RN 18400-76-5 HCA

CN Copper, [trihydrogen 4-hydroxy-5-[[1-hydroxy-7-[[1-[p-[(2-hydroxyethyl)sulfonyl]phenyl]-3-methyl-5-oxo-2-pyrazolin-4-yl]azo]-3-sulfo-2-naphthyl]azo]-m-benzenedisulfonato(2-)]-, mono(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

PAGE 1-A

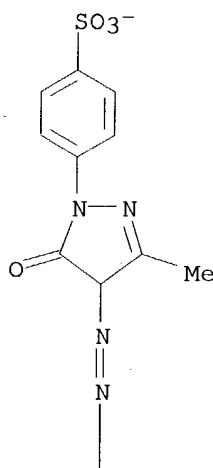


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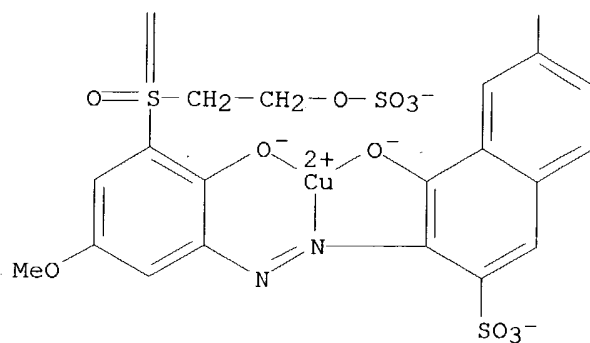
● 4 H⁺

RN 18400-78-7 HCA
 CN Copper, [dihydrogen 4-hydroxy-3-[[2-hydroxy-3-[(2-hydroxyethyl)sulfonyl]-5-methoxyphenyl]azo]-6-[[3-methyl-5-oxo-1-(p-sulfophenyl)-2-pyrazolin-4-yl]azo]-2-naphthalenesulfonato(2-)]-, mono(hydrogen sulfate) (ester) (8CI)
 (CA INDEX NAME)

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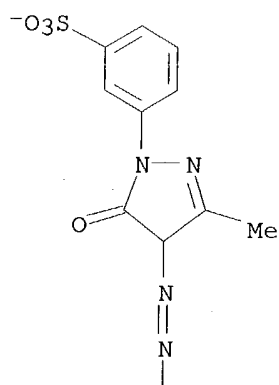


PAGE 2-A

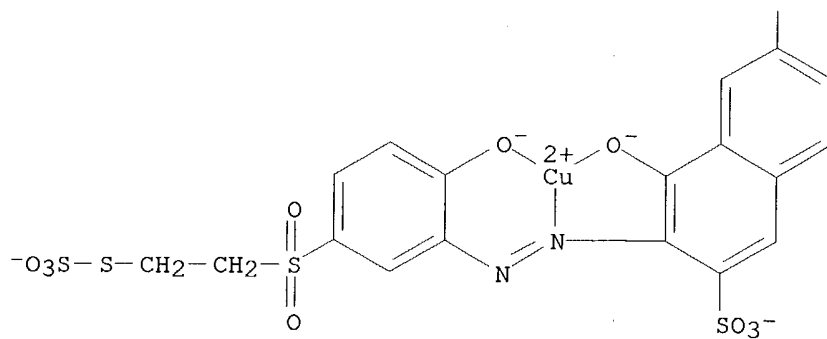
● 3 H⁺

RN 18400-79-8 HCA
 CN Copper, [dihydrogen 4-hydroxy-3-[[2-hydroxy-5-[(2-mercaptoethyl)sulfonyl]phenyl]azo]-6-[[3-methyl-5-oxo-1-(m-sulfophenyl)-2-pyrazolin-4-yl]azo]-2-naphthalenesulfonato(2-)]-, S-(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

PAGE 1-A

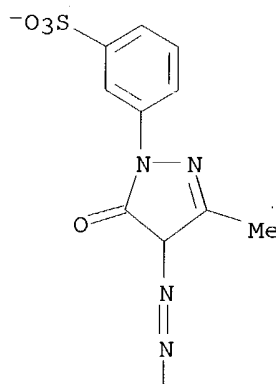


PAGE 2-A

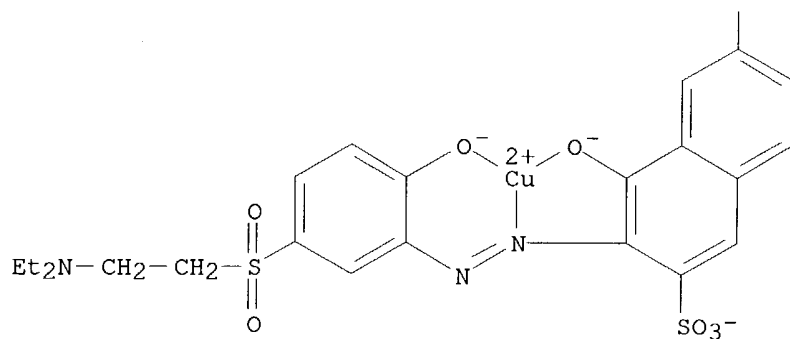
● 3 H⁺

RN 18400-80-1 HCA
 CN Copper, [dihydrogen 3-[[5-[[2-(diethylamino)ethyl]sulfonyl]-2-hydroxyphenyl]azo]-4-hydroxy-6-[[3-methyl-5-oxo-1-(m-sulfophenyl)-2-pyrazolin-4-yl]azo]-2-naphthalenesulfonato(2-)]- (8CI) (CA INDEX NAME)

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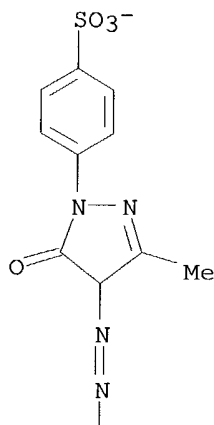


PAGE 2-A

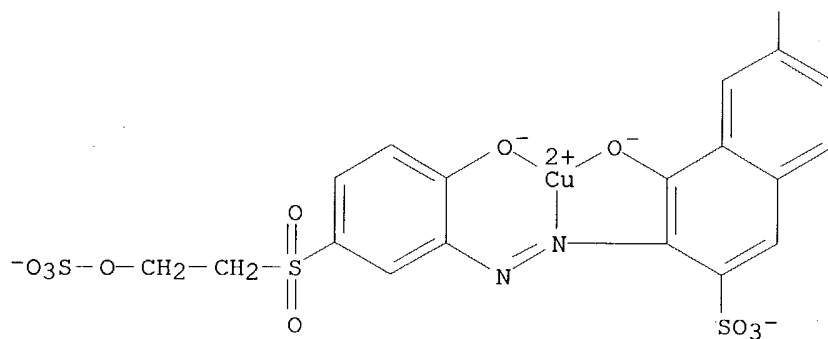
● 2 H⁺

RN 18516-97-7 HCA
 CN Copper, [dihydrogen 4-hydroxy-3-[[2-hydroxy-5-[(2-hydroxyethyl)sulfonyl]phenyl]azo]-6-[[3-methyl-5-oxo-1-(p-sulfophenyl)-2-pyrazolin-4-yl]azo]-2-naphthalenesulfonato(2-)]-, mono(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

PAGE 1-A

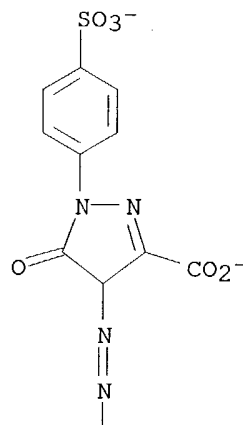


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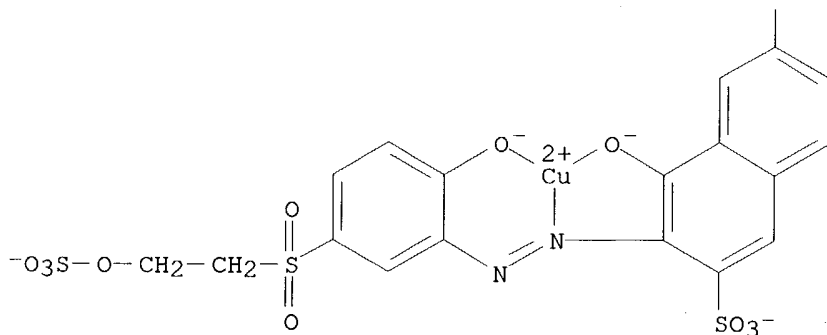
● 3 H⁺

RN 21307-01-7 HCA
 CN Copper, [trihydrogen 4-[[8-hydroxy-7-[[2-hydroxy-5-[(2-hydroxyethyl)sulfonyl]phenyl]azo]-6-sulfo-2-naphthyl]azo]-5-oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylato(2-)]-, mono(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

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● 4 H⁺

IC C09B; D06P
 CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)
 IT 18015-44-6P 18015-46-8DP, 2-Pyrazoline-3-carboxylic acid,
 4-[[8-hydroxy-7-[[2-hydroxy-5-[(2-hydroxyethyl)sulfonyl]phenyl]azo]-6-sulfo-2-naphthyl]azo]-5-oxo-1-(p-sulfophenyl)-, mono(hydrogen sulfate) (ester), complexes with chromium and with copper 18015-46-8P
 18346-16-2P 18346-17-3P 18346-18-4P
 18400-76-5P 18400-77-6P 18400-78-7P
 18400-79-8P 18400-80-1P 18516-97-7P
 18603-59-3P 18616-35-8P 19538-10-4P 21307-01-7P
 RL: IMF (Industrial manufacture); PREP (Preparation) (preparation of)

L19 ANSWER 15 OF 15 HCA COPYRIGHT 2004 ACS on STN

55:62165 Original Reference No. 55:11871c-g Metalized bianisidine dyes.

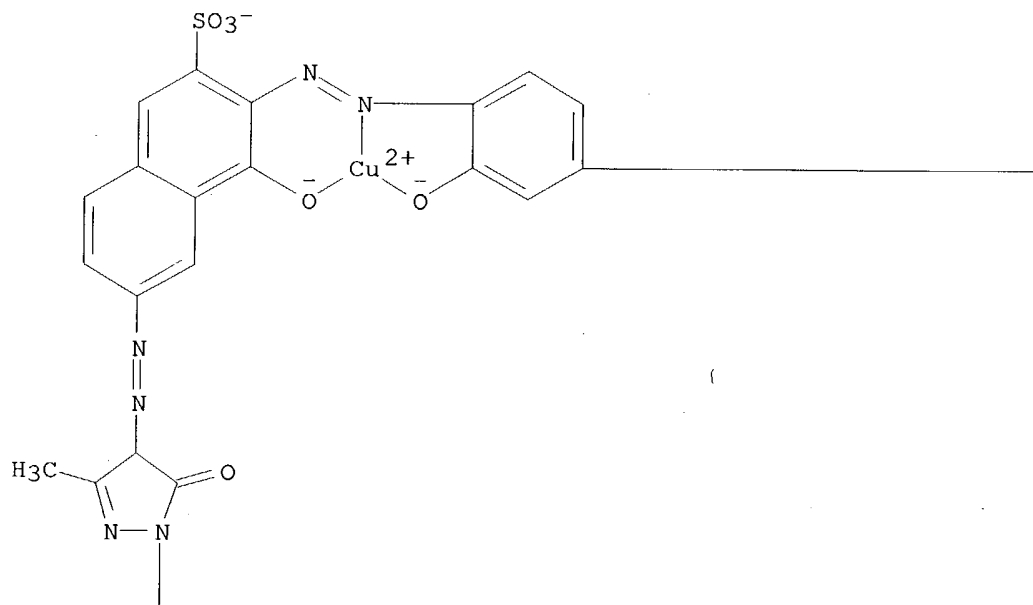
Morgan, Jack F.; Vollmer, David W. (General Aniline & Film Corp.). US 2970993 19610207 (Unavailable). APPLICATION: US .

AB The title compds. (I) yield gray colors directly on cellulosic fibers with exceptional light-fastness and resistance to antiretreatment. I are the di-Cu complexes of polyazo dyes of the general formula HOQN:NAN:NM(OH)N:NX, where Q is the radical of naphthol- or aminonaphtholmono- or disulfonic acid (the adjacent azo group being ortho to the naphtholic OH group); M is the radical of 6- or 7-amino-1-naphtholmono- or disulfonic acid; X is a 5-pyrazolone coupling component, and A is the residue of tetrazotized 4,4'-bi-o-anisidine (II). Thus: 24.4 parts II is tetrazotized, then 25 parts NaHCO₃ is added, followed by the slow addition of a neutral solution of 23.9 parts of 7-amino-1-naphthol-3-sulfonic acid (III) in 200 parts of H₂O. The coupling is immediate and is balanced at the point where no further tetrazotized II remains. The reaction mixture is acidified with 37.1 parts of 20° B.act.e.e. HCl, cooled to 15-20° with ice, and diazotized. The mixture is stirred 1-2 hrs. and adjusted to pH 6 with NaHCO₃. A neutral solution of 22.8 parts 3-methyl-1-(p-sulfophenyl)-5-pyrazolone (IV) in 150 parts H₂O is added over 15-20 min., then a neutral solution of 40 parts 8-amino-1-naphthol-5,7-disulfonic acid (V) in 200 parts of H₂O, followed by immediate addition of a solution of 40 parts of Na₂CO₃ in 200 parts of H₂O. The mixture is stirred for several hrs. to complete the coupling. CuSO₄.5H₂O (62.5 parts) in 46 parts MeNH₂ in 400 parts H₂O is added, and the mixture is heated at 80-5° for 4 hrs. The resulting

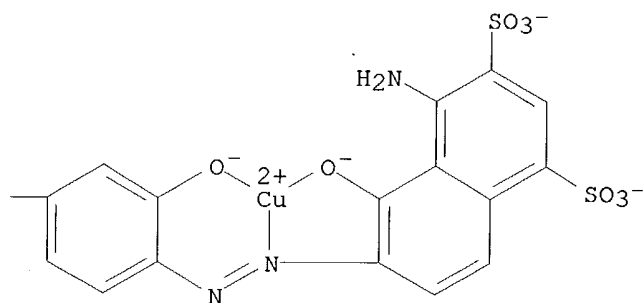
solution is evaporated to dryness to obtain the product which dyes cotton and regenerated cellulose rayon gray shades which are light- and wash-fast. The dyeings also survive conventional anticrease treatment with melamine- and urea-HCHO resins. Similarly, compds. dyeing greenish-gray shades are obtained from the di-Cu complexes of: II, V, III, and 3-methyl-1-phenyl-5-pyrazolone; II, III, 1-phenyl-3-carboxy-5-pyrazolone, and V; II, 7-amino-1-naphthol-3,6-disulfonic acid, IV, and V; 6-amino-1-naphthol-3-sulfonic acid, IV, II, and 8-amino-1-naphthol-3,6-disulfonic acid; and II, 2-naphthol-3,6-disulfonic acid, III, and IV.

- IT **108019-11-0**, 1-Naphthol-5,7-disulfonic acid, 8-amino-2-{3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-phenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylazo}-, dicopper derivative
108632-15-1, 1-Naphthol-5,7-disulfonic acid, 8-amino-2-{3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3,6-disulfo-2-naphthylazo]-4-biphenylazo}-, dicopper derivative
122094-79-5, 2-Pyrazoline-3-carboxylic acid, 4-{7-[4'-(8-amino-1-hydroxy-5,7-disulfo-2-naphthylazo)-3,3'-dihydroxy-4-biphenylazo]-8-hydroxy-6-sulfo-2-naphthylazo}-5-oxo-1-phenyl-, dicopper derivative
124564-42-7, 1-Naphthol-5,7-disulfonic acid, 8-amino-2-{3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylazo}-, dicopper derivative
 (preparation of)
 RN 108019-11-0 HCA
 CN 1-Naphthol-5,7-disulfonic acid, 8-amino-2-[3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-phenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylazo]-, dicopper deriv. (6CI) (CA INDEX NAME)

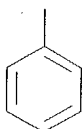
PAGE 1-A



PAGE 1-B

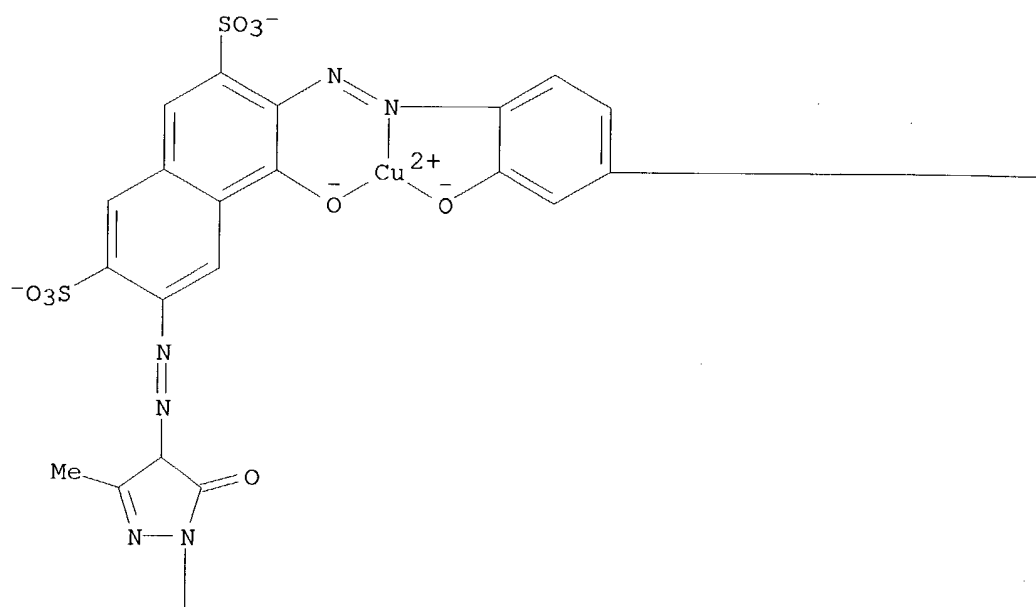


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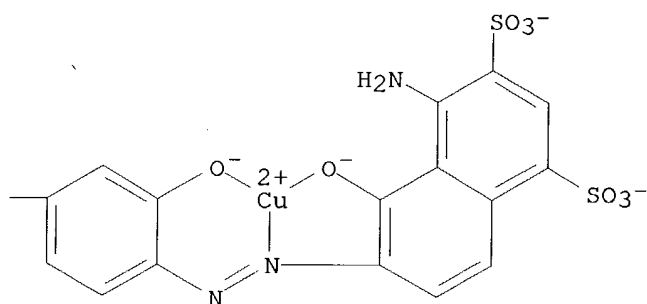
● 3 H⁺

RN 108632-15-1 HCA
 CN 1-Naphthol-5,7-disulfonic acid, 8-amino-2-[3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3,6-disulfo-2-naphthylazo]-4-biphenylazo]-, dicopper deriv. (6CI) (CA INDEX NAME)

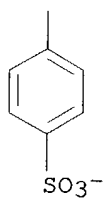
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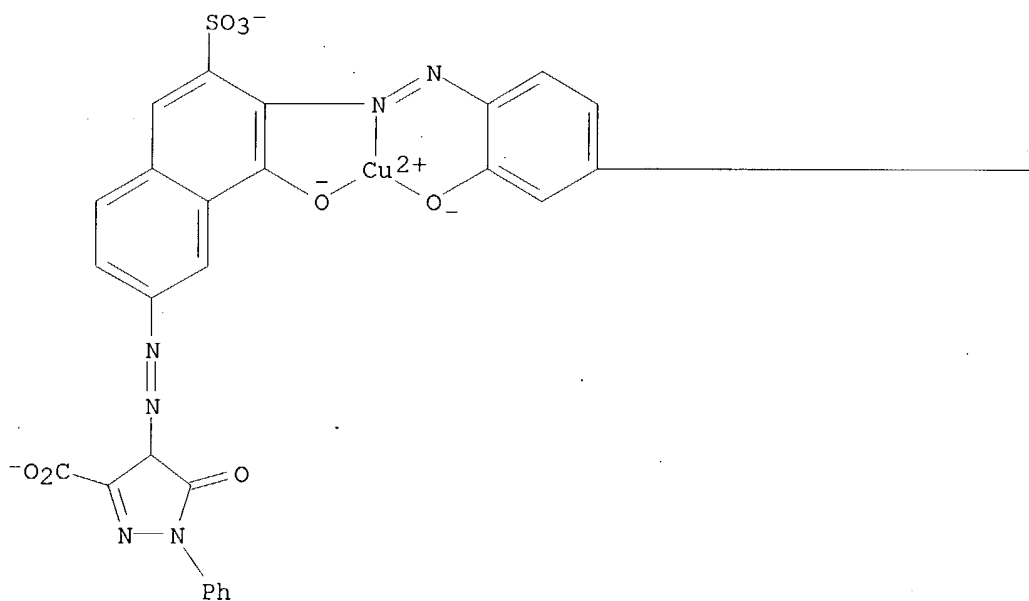


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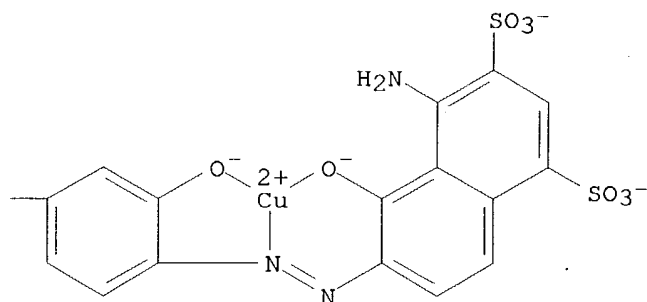
● 5 H^+

RN 122094-79-5 HCA
 CN 2-Pyrazoline-3-carboxylic acid, 4-[7-[4'-(8-amino-1-hydroxy-5,7-disulfo-2-naphthylazo)-3,3'-dihydroxy-4-biphenylazo]-8-hydroxy-6-sulfo-2-naphthylazo]-5-oxo-1-phenyl-, dicopper deriv. (6CI) (CA INDEX NAME)

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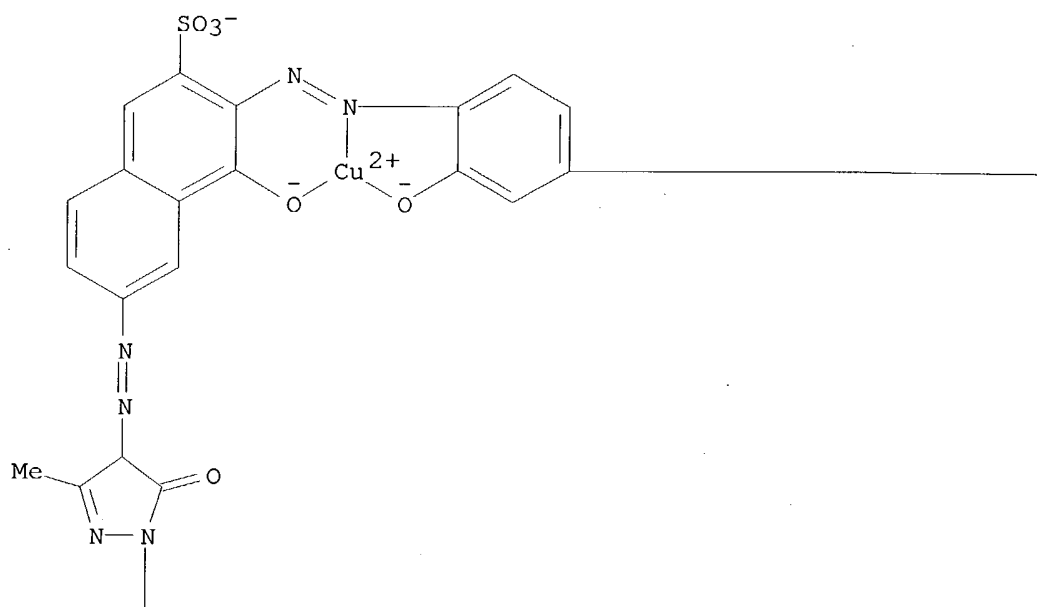


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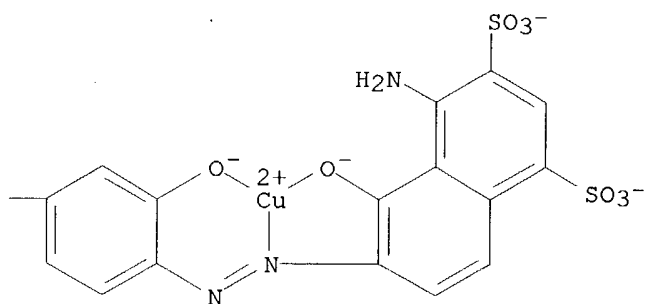
● 4 H⁺

RN 124564-42-7 HCA
 CN 1-Naphthol-5,7-disulfonic acid, 8-amino-2-[3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylazo]-, dicopper deriv. (6CI) (CA INDEX NAME)

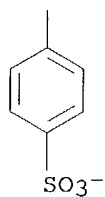
PAGE 1-A



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PAGE 2-A

● 4 H^+

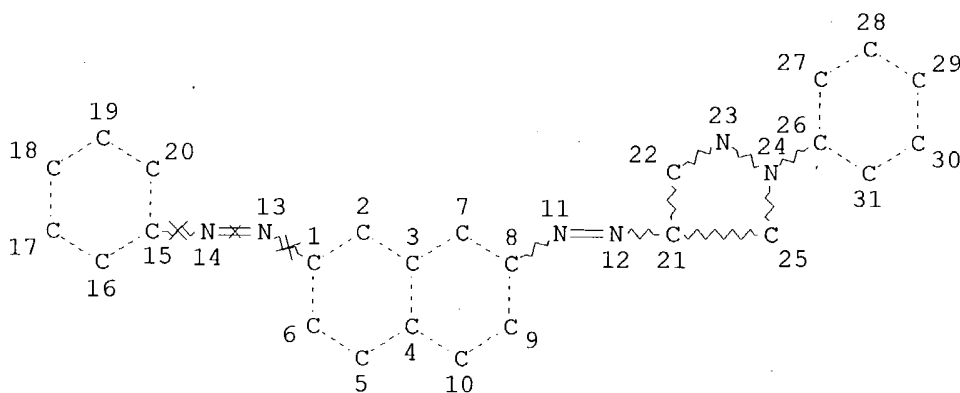
CC 25 (Dyes and Textiles)

IT **108019-11-0**, 1-Naphthol-5,7-disulfonic acid, 8-amino-2-{3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-phenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylylazo}-, dicopper derivative
108632-15-1, 1-Naphthol-5,7-disulfonic acid, 8-amino-2-{3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3,6-disulfo-2-naphthylazo]-4-biphenylylazo}-, dicopper derivative
 108756-87-2, 1-Naphthol-3,6-disulfonic acid, 8-amino-2-{3,3'-dihydroxy-4'-[1-hydroxy-6-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylylazo}-, dicopper derivative **122094-79-5**,
 2-Pyrazoline-3-carboxylic acid, 4-{7-[4'-(8-amino-1-hydroxy-5,7-disulfo-2-naphthylazo)-3,3'-dihydroxy-4-biphenylylazo]-8-hydroxy-6-sulfo-2-naphthylazo}-5-oxo-1-phenyl-, dicopper derivative **124564-42-7**,
 1-Naphthol-5,7-disulfonic acid, 8-amino-2-{3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylylazo}-, dicopper derivative
 (preparation of)

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=> d que stat 122

L1 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 13

NSPEC IS RC AT 14

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE

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L7 47 SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND CU/ELS

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L22 1 SEA FILE=CAOLD ABB=ON PLU=ON L20 AND L21

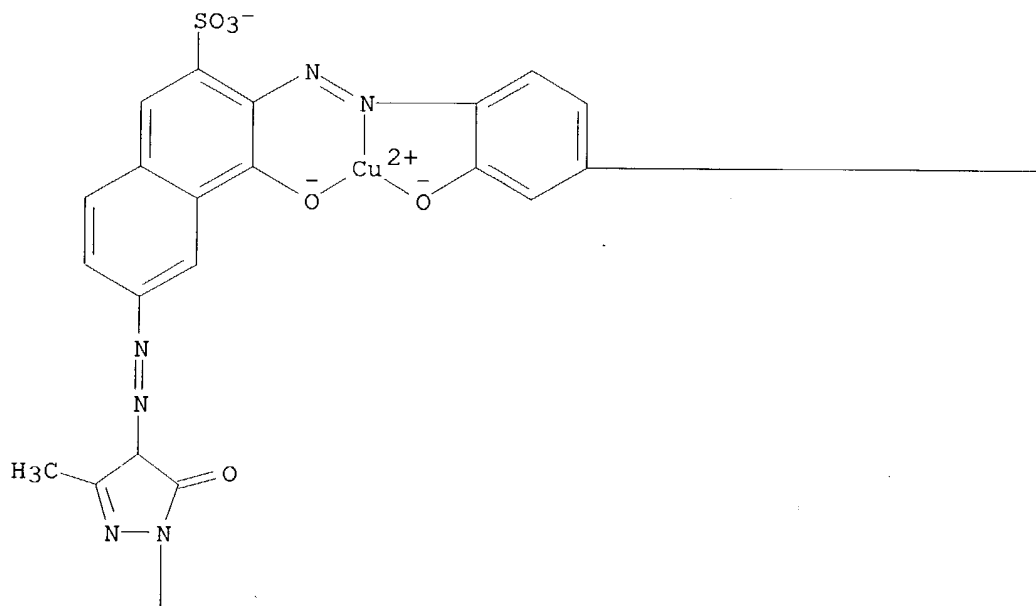
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L22 ANSWER 1 OF 1 CAOLD COPYRIGHT 2004 ACS on STN
 AN CA55:11871c CAOLD
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 PA General Aniline & Film Corp.
 DT Patent
 TI metalized bianisidine dyes
 AU Morgan, Jack F.; Vollmer, D. W.
 DT Patent

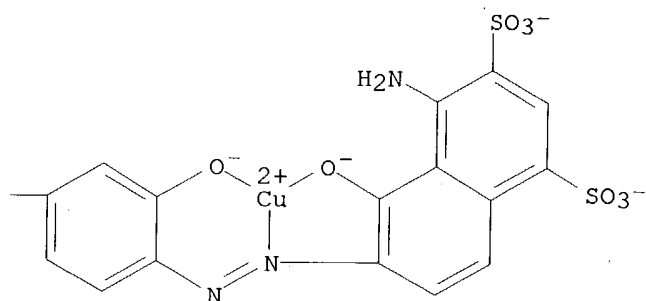
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122094-79-5 124564-42-7		
108019-11-0 108632-15-1 122094-79-5		
124564-42-7		

 RN 108019-11-0 CAOLD
 CN 1-Naphthol-5,7-disulfonic acid, 8-amino-2-[3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-phenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylazo]-, dicopper deriv. (6CI) (CA INDEX NAME)

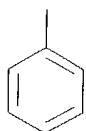
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PAGE 1-B

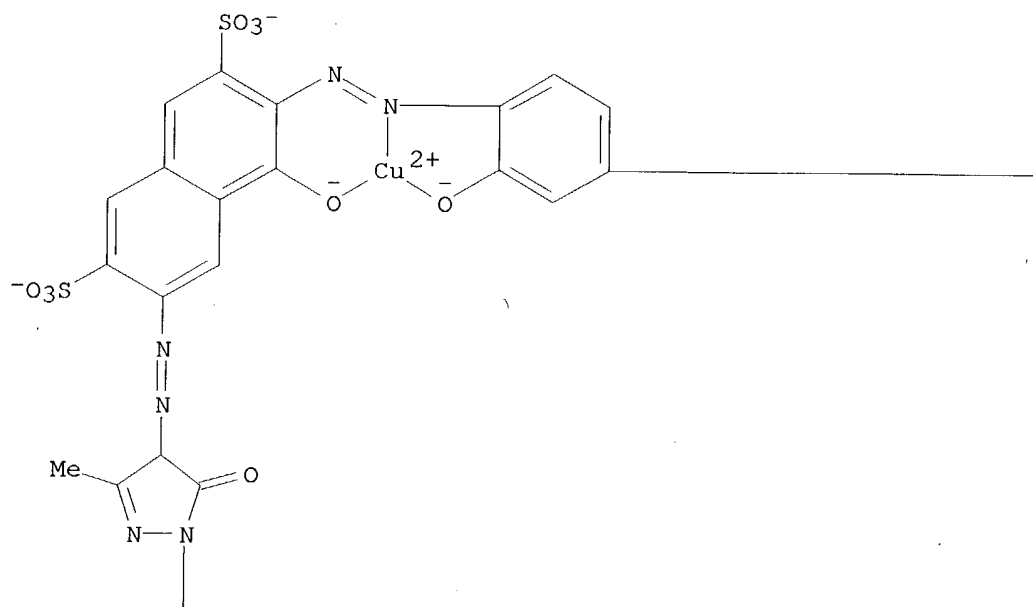


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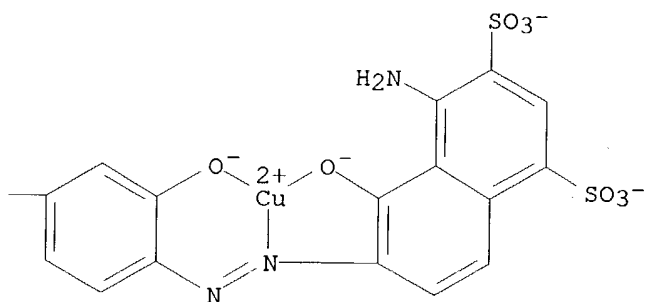
● 3 H⁺

RN 108632-15-1 CAOLD
 CN 1-Naphthol-5,7-disulfonic acid, 8-amino-2-[3,3'-dihydroxy-4'-[1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3,6-disulfo-2-naphthylazo]-4-biphenylazo]-, dicopper deriv. (6CI) (CA INDEX NAME)

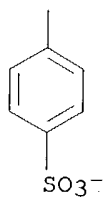
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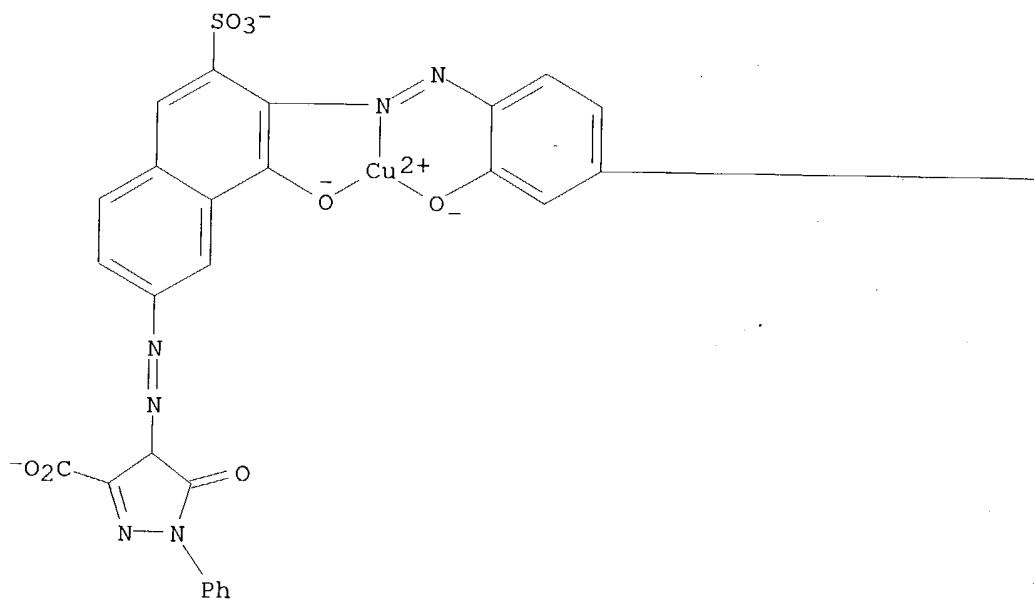


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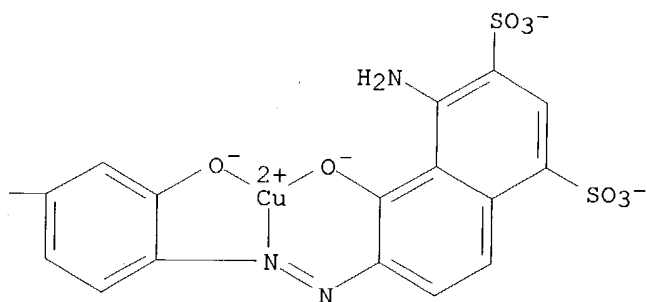
● 5 H^+

RN 122094-79-5 CAOLD
 CN 2-Pyrazoline-3-carboxylic acid, 4-[7-[4'-(8-amino-1-hydroxy-5,7-disulfo-2-naphthylazo)-3,3'-dihydroxy-4-biphenylazo]-8-hydroxy-6-sulfo-2-naphthylazo]-5-oxo-1-phenyl-, dicopper deriv. (6CI) (CA INDEX NAME)

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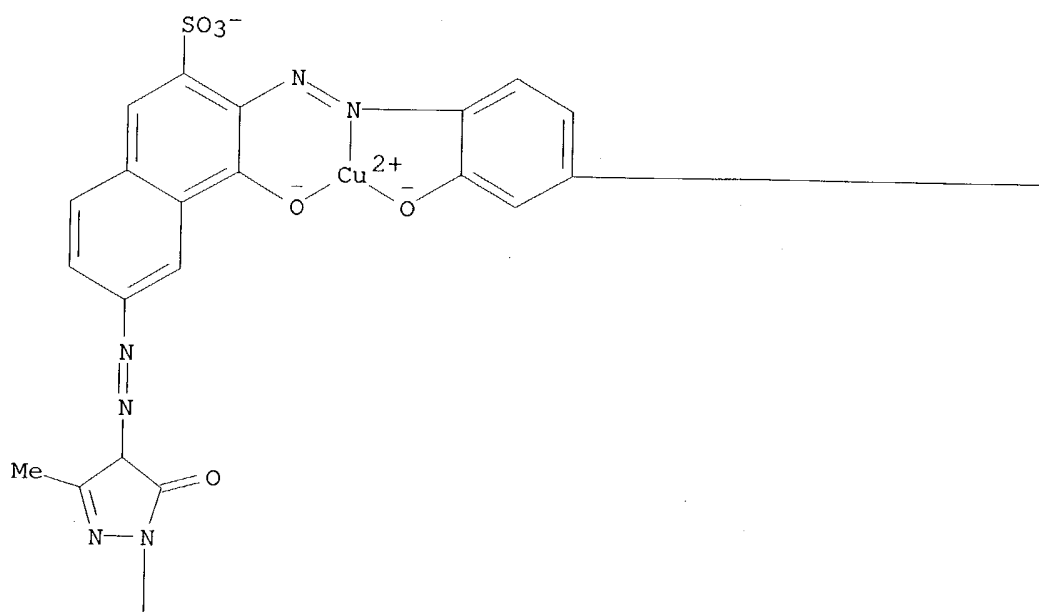


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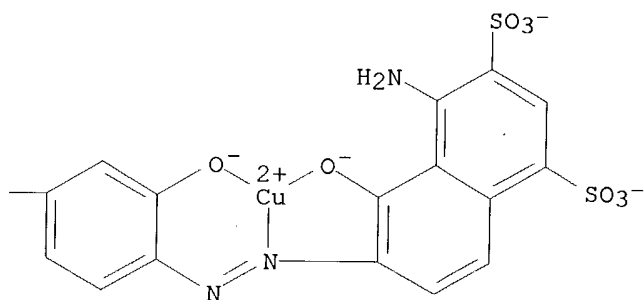
● 4 H⁺

RN 124564-42-7 CAOLD
 CN 1-Naphthol-5,7-disulfonic acid, 8-amino-2-[3,3'-dihydroxy-4'-(1-hydroxy-7-(3-methyl-5-oxo-1-p-sulfophenyl-2-pyrazolin-4-ylazo)-3-sulfo-2-naphthylazo]-4-biphenylazo]-, dicopper deriv. (6CI) (CA INDEX NAME)

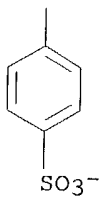
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● 4 H^+